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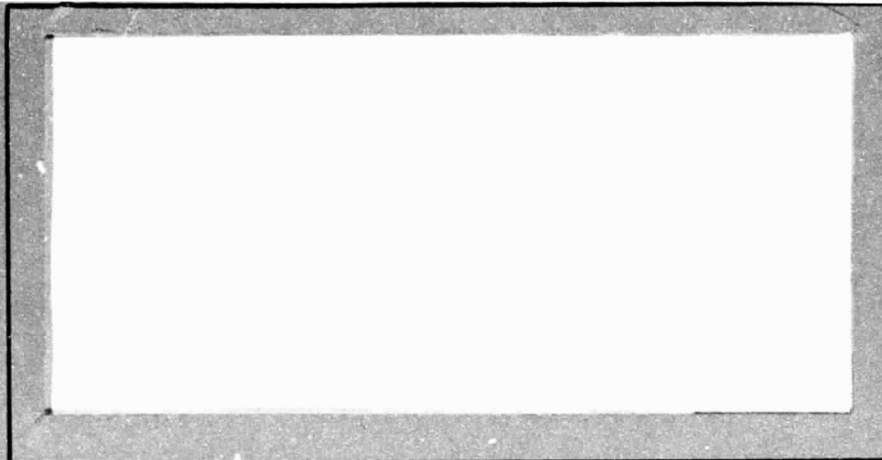
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TURBULENCE SIMULATION
MECHANIZATION FOR SPACE SHUTTLE ORBITER
DYNAMICS AND CONTROL STUDIES

SUMMARY REPORT

December 1977

By

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FOREWORD

This report was prepared for the National Aeronautics and Space Administration, Marshall Space Flight Center as a summary report on the third phase of work on Contract NAS8-31173, "Determination of Constant-Volume Balloon Capabilities for Aeronautical Research." The work described herein was performed by Science Applications, Incorporated, Huntsville Division with Dr. Frank B. Tatom as Principal Investigator.

The NASA Contracting Officer's Representative for this work was Dr. George H. Fichtl, MSFC Space Sciences Laboratory (ES-43).

ABSTRACT

The report is concerned with the mechanization of the NASA turbulence simulation model.

A description of the current version of the model in the form of a digital computer program, TBMOD, is presented. This description includes a discussion of the logic of the program, and definitions of all inputs and outputs. An alternate method of shear simulation suitable for incorporation into the model is described. The simulation is based on a von Karman spectrum and the assumption of isotropy. The resulting spectral density functions for the shear model are included.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION.	1-1
2 ATMOSPHERIC TURBULENCE SIMULATION PROGRAM	2-1
2.1 Background.	2-1
2.2 Modifications to the Original Program	2-1
2.3 Inputs.	2-4
2.4 Outputs	2-6
2.4.1 First Output.	2-6
2.4.2 Second Output	2-7
2.5 Internal Control Parameters	2-8
3 ALTERNATE METHOD OF SHEAR SIMULATION.	3-1
3.1 Background.	3-1
3.2 Derivation of Three-Dimensional Shear Spectra	3-1
3.3 Derivation of Two-Dimensional Shear Spectra	3-4
3.4 Derivation of One-Dimensional Shear Spectra	3-7
4 REFERENCES CITED.	4-1
APPENDIX A. Sample Output from TBMOD.	A-1

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Page</u>
2-1 Original Logic for TBMOD.	2-2
2-2 Subroutine Hierarchy.	2-3
2-3 Final Modified Logic for TBMOD.	2-5
3-1 One-Dimensional Shear Spectral Density Function $\phi_{11/22}(K_1)$	3-11
3-2 One-Dimensional Shear Spectral Density Function $\phi_{22/22}(K_1)$	3-14
3-3 One-Dimensional Shear Spectral Density Function $\phi_{33/22}(K_1)$	3-17

1. INTRODUCTION

The effects of atmospheric turbulence on the Space Shuttle Orbiter during horizontal and near horizontal flight during entry are critical for determining Space Shuttle design, control, and "pilot-in-the-loop" effects. A model for atmospheric turbulence along the flight path of the Shuttle Orbiter has been developed [1] which incorporates effects of instantaneous vertical and horizontal gusts at the vehicle center-of-gravity and horizontal and vertical shears along the yaw, pitch, and roll axes.

The current research effort has been divided into two parts. The first, which is described in Section 2, has involved implementing a modified version of the original model on the MSFC 1108 computer. The second effort, which is described in Section 3, has been concerned with the development of an alternate method for computing shears. A list of the references cited is provided in Section 4.

2. ATMOSPHERIC TURBULENCE SIMULATION PROGRAM

2.1 BACKGROUND

The computer program TBMOD is a routine to simulate atmospheric turbulence velocity components and (originally) velocity shear components. The program was initially developed by Colorado State University; SAI has developed it for use on the UNIVAC 1108.

The organization of the original program is shown in Figure 2-1 as a pseudo-flowchart. This flowchart differs from the usual in that its blocks represent calculation stages rather than typical computer operations. The annotations to the diagram give the actual names of the subroutines in which the calculations are performed. Figure 2-2 gives a more representative view of the hierarchy of the calling sequence.

2.2 MODIFICATIONS TO THE ORIGINAL PROGRAM

In the process of adapting the program to the UNIVAC 1108 and in the course of using the program a number of modifications were made. However the original code was retained intact as much as was practical. Moreover, in those modifications which were made the general terminology and logic of the original code were followed as closely as possible.

Modifications were made to the subroutines VAR and SCALE to bring these values into agreement with JSC 07700 [2]. The original code used relationships for the variance and integral length which were applicable to the surface boundary layer with a friction velocity of 1 ft/sec. The new code should provide suitable values for these parameters from the surface to 1.5×10^6 ft.

Similarly, changes were made in the computation of the coherences and variances in the formulation of the Fourier amplitudes. These modifications which include the addition of two subroutines COEFMU and INOMGA provide for the determination of all the Fourier amplitudes from interlevel correlations. The intralevel correlation between the longitudinal and the vertical velocity components is usually assumed to be valid only in the surface boundary layer.

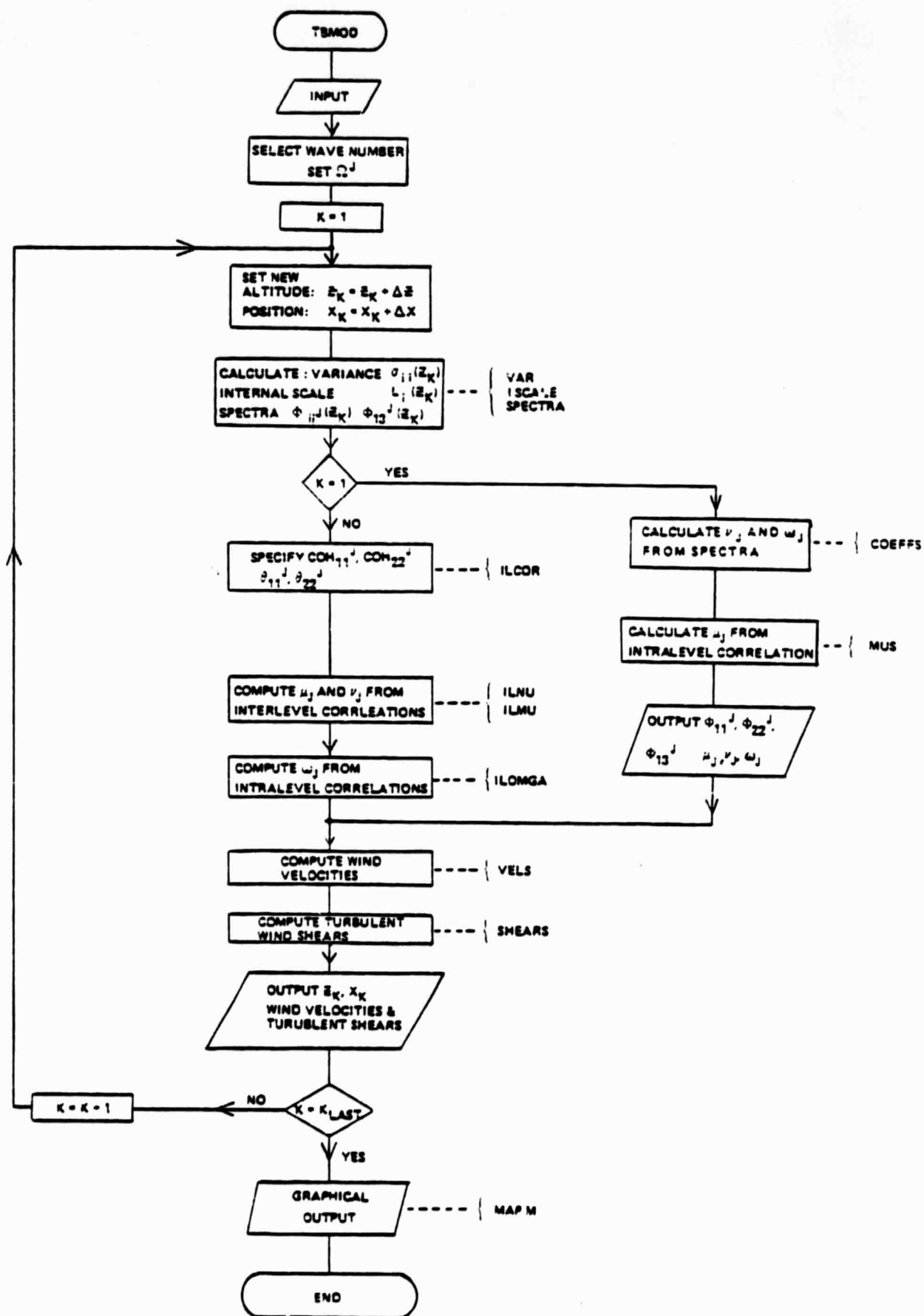
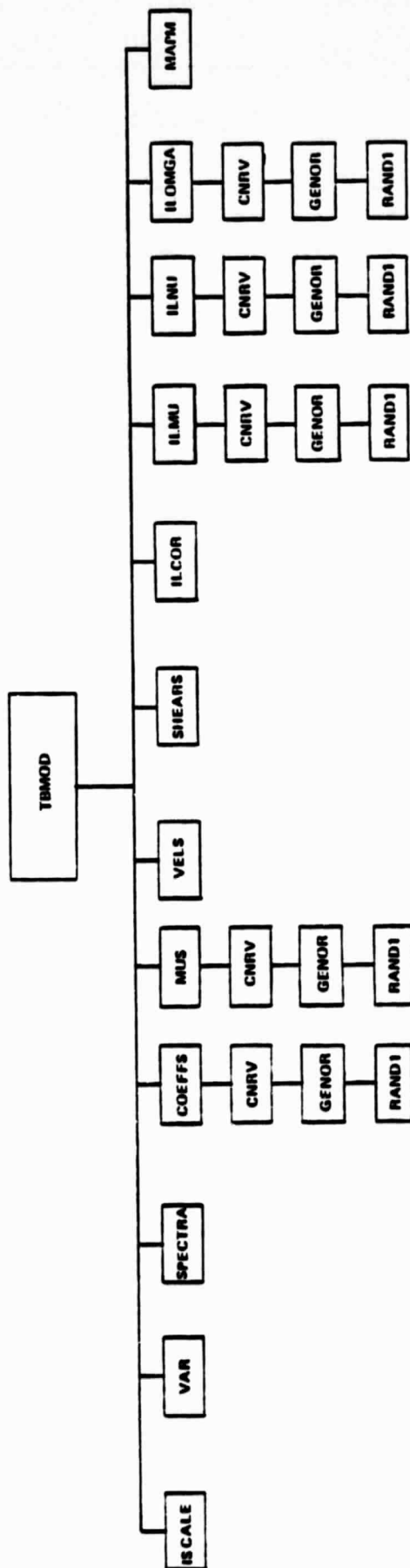


Figure 2-1. Original Logic for TBMOD



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Figure 2-2. Subroutine Hierarchy

Both computational and theoretical problems were discovered in the use of the subroutine SHEARS. Consequently, this subroutine was deleted from the program.

The subroutine MAPM supplied graphic output in the original program. This routine was never implemented for the UNIVAC 1008 system. A subroutine MAPM is retained in the current version of TBMOD and is called but the routine is a dummy routine which performs no function.

Figure 2-3 shows the flowchart for the current version of TBMOD with distinction being made for those subroutines which have been modified. The hierarchy of calling sequences is the same as shown in Figure 2-2 except that the routine SHEARS has been deleted, and routines COEFMU and INOMGA have been added. The routine MAPM, as explained above, is retained in name only in the program but serves no function; thus, it has been deleted from Figure 2-3.

2.3 INPUTS

The input to TBMOD consists of three READ instructions. The first,

```
READ(5,997,END=201) XSET
997 FORMAT (E14.7)
```

provides the seed for the random number generature. The value in use is

XSET = 19547322368

and is selected so that no cyclic set of numbers will be utilized in one calculation.

The second READ statement,

```
READ(5,102) BSTAT
102 FORMAT (10F8.4)
```

inputs the vector BSTAT, which is dimensioned to have 10 components. Four components of BSTAT are described in the comment cards incorporated into the program deck. BSTAT(1) is the maximum allowable wave number (ft^{-1}). BSTAT(2) is the spatial periodicity of the disturbance (ft). The set of wave numbers is selected from these two parameters and this causes a restriction on these two values such that

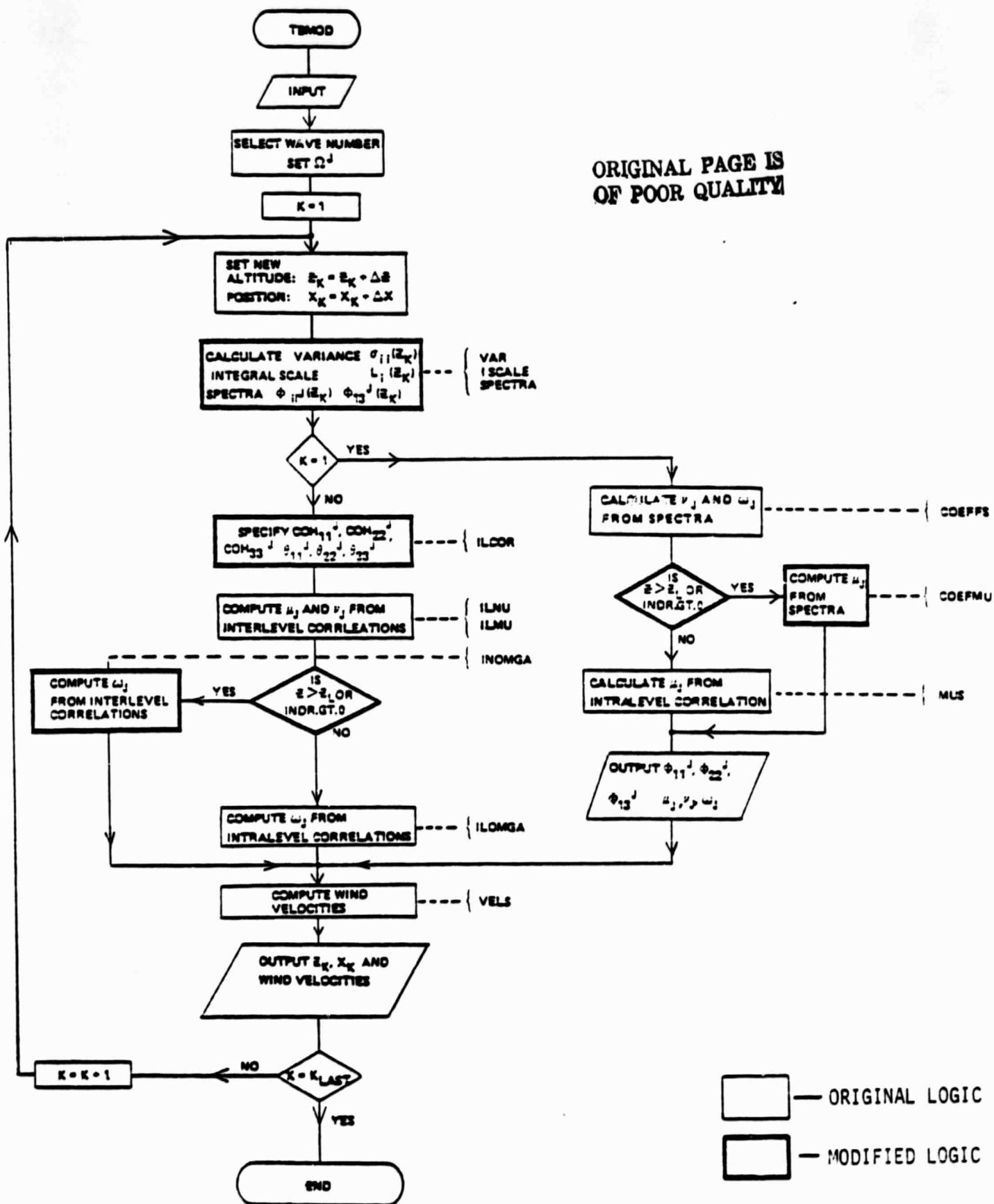


Figure 2-3. Final Modified Logic for TBMOD

$$\text{BSTAT}(1) * \text{BSTAT}(2) + 5.05 \leq 99.$$

BSTAT(3) is described as the surface roughness and BSTAT(4) as the maximum allowable change in altitude before recalculating parameters that depend on altitude; however, neither of these parameters is referenced in the program. These two parameters may however have been used in earlier versions of the original program. The last six components BSTAT(5) through BSTAT(10), are neither defined nor referenced in the program.

The third READ statement,

```
      READ(5,103) X (KP), Z (KP)
102 FORMAT (2F20.10)
```

inputs the longitudinal and vertical position (ft) for the initial time step.

2.4 OUTPUTS

The output originally consisted of three sequences of statements. One of these sequences was for graphical output. This particular sequence has been deleted from the current program leaving only two output sequences. From the flowchart, Figure 2-3, the first sequence provides information regarding the first step only. The second output is shorter and consists only of the position of the vehicle and the variables simulated.

2.4.1 First Output

The first output statements are:

```
      WRITE (6,503) MMAX
503  FORMAT (1H1, 'MMAX = ', I10//)
      WRITE (6,995) XSET
995  FORMAT (1H0, ' XSET = ' I20)
      WRITE (6,504)
504  FORMAT (1H0, 'WAVE NUMBERS')
      WRITE (6,505) (KX (I), I = 1, MMAX)
505  FORMAT (IX, 10F10.5)
      . . . . .
      WRITE (6,32) (K, PHI(1,1,K), K=1, MMAX)
      WRITE (6,32) (K, PHI(2,2,K), K=1, MMAX)
      WRITE (6,32) (K, PHI(1,3,K), K=1, MMAX)
32  FORMAT (1X, 4(14, 2X, E11.3, 3X, E11.3))
      . . . . .
```

```

WRITE (6,46)
46 FORMAT (1H0,14X,'MU',39X,'NU',37X,'OMEGA')
WRITE (6,47) (MU(J),NU(J),OMEGA(J),J=1,MMAX)
47 FORMAT (1X,2(E12.4,5X,E12.4,10X),E12.4,5X,E12.4)
WRITE (6,999)
999 FORMAT (1H0,'KP',15X,'X',15D,'Z',15X,'J',15X,'V',15X,'W',//)

```

These statements are not all physically located together, as indicated, but pertain to the initial conditions or the first step in the program.

The first output statements refer to seven variables. The first of these, MMAX, is calculated according to the relation

$$MMAX = 2*BSTAT(1)*BSTAT(2) + 1$$

and originally represented the total number of wave numbers covered in the calculation. As an explanation, both positive and negative wave numbers and the wave number zero were originally included; however, the calculations have been modified so that only the positive wave numbers contribute, and wave number zero is excluded from the calculation of the simulated variables.

The parameter XSET was defined in subsection 2.3. The KX vector is the set of wave numbers (ft^{-1}). The parameter PHI is the spectra (ft^3/sec^2). The parameters MU, NU and OMEGA are the Fourier amplitudes (ft/sec).

A typical output generated by this set of instructions is provided in Appendix A.

2.4.2 Second Output

The second output consists of the code

```

WRITE (6,51) KP, X (KP),Z(KP),U(KP),V(KP),W(KP)
51 FORMAT (IX,I3,7X,5E16.7)

```

The output variables here are the step number KP, the longitudinal position X(ft), the vertical position Z(ft), the longitudinal wind gust velocity U (ft/sec) the lateral velocity V(ft/sec), and the vertical velocity W(ft/sec) A typical output generated by this set of instructions is included in Appendix A.

2.5 INTERNAL CONTROL PARAMETERS

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A number of important control parameters are not accessible by input data and should be pointed out. The first parameters in the category are given in the code as

```
INDR = 0  
ZB   = 1000
```

These parameters control the use of the intralevel correlation in calculating the simulation parameters. The intralevel correlations are considered to be valid only in the surface boundary level which satisfies the relation

$$Z \leq ZB \quad (\text{feet})$$

However, it may be desirable not to use these intralevel correlations even in the boundary layer; in which case,

```
INDR > 0
```

There is no input which allows the user to select the step interval. This is done internally by the code based on the following logic:

```
KP = KP + 1  
X(KP) = X(KP) + 100  
Z(KP) = Z(KP) - 36.397
```

Thus at every step the vehicle moves longitudinally 100 ft and vertically down 36.397 feet.

The final internal control controls the number of steps taken. Originally this control was based on the number of steps KP, and was coded as

```
IF(KP.GT.10) GO TO 200
```

This was modified to allow the vehicle to descend to the ground. The modified code reads

```
IF (Z(KP).LE.0) GO TO 200
```

However, the modified code could be replaced or augmented by the original statement or a DO-loop to restrict the number of computation steps.

Because these controls are internal, the code must be modified if any change is desired by the user. Any or all of these controls could be added to the input list and such a change is recommended.

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3. ALTERNATE METHOD OF SHEAR SIMULATION

3.1 BACKGROUND

A careful examination of the derivation of the original shear simulation [1] raised certain basic issues regarding its validity. Attempts to obtain clarification of these issues with the original authors were not successful within the time period covered by this report. For this reason an alternate method of simulating the wind shear was investigated.

3.2 DERIVATION OF THREE-DIMENSIONAL SHEAR SPECTRA

The basic approach in the development of an alternate shear model has involved developing a spectral representation of shears which is based on the spectral representation of gusts. The basic relation can be derived as follows:

By definition,

$$\begin{aligned} < u(x, y, z) u(x', y', z') > \\ &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) \exp\{j[k_1(x - x') + k_2(y - y') \\ &\quad + k_3(z - z')]\} dk_1 dk_2 dk_3 \end{aligned} \quad (1)$$

Differentiation of Eq. (1) with respect to y yields:

$$\begin{aligned} < \frac{\partial u}{\partial y}(x, y, z) u(x', y', z') > \\ &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) j k_2 \exp\{j[k_1(x - x') \\ &\quad + k_2(y - y') + k_3(z - z')]\} dk_1 dk_2 dk_3 \end{aligned} \quad (2)$$

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Differentiation of Eq. (2) with respect to y' yields:

$$\begin{aligned} & \left\langle \frac{\partial u}{\partial y}(x, y, z) \frac{\partial u}{\partial y'}(x', y', z') \right\rangle \\ &= \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \phi_{11}(k_1, k_2, k_3) k_2^2 \exp\{j[k_1(x - x') \\ &+ k_2(y - y') + k_3(z - z')]\} dk_1 dk_2 dk_3 \end{aligned} \quad (3)$$

By inspection of Eq. (3) the spectral density function of the $\frac{\partial u}{\partial y}$ shear, $\phi_{11/22}$, can be expressed as

$$\phi_{11/22}(k_1, k_2, k_3) = \phi_{11}(k_1, k_2, k_3) k_2^2 \quad (4)$$

Likewise, the spectral density function of the $\frac{\partial u}{\partial x}$ shear, $\phi_{11/11}$, can be expressed as

$$\phi_{11/11}(k_1, k_2, k_3) = \phi_{11}(k_1, k_2, k_3) k_1^2 \quad (5)$$

or in general,

$$\phi_{ii/jj}(k_1, k_2, k_3) = \phi_{ii}(k_1, k_2, k_3) k_j^2 \quad (6)$$

Now the three-dimensional spectra for isotropic turbulence in incompressible flow must satisfy the relation [3]

$$\phi_{ij}(k_1, k_2, k_3) = \frac{E(k)}{4\pi k^2} \left(\delta_{ij} - \frac{k_i k_j}{k^2} \right) \quad (7)$$

The energy spectrum $E(k)$ for isotropic turbulence in turn can be related to the one-dimensional spectrum $\phi_{11}(k_1)$ by the relation [3]

$$E(k) = k^3 \frac{\partial}{\partial k} \left[\frac{1}{k} \frac{\partial \phi_{11}(k_1)}{\partial k} \right] \quad (8)$$

For a two-sided von Karman spectrum [4],

$$\phi_{11}(k_1) = \frac{\sigma^2 L}{\pi} \frac{1}{[1 + (aLk_1)^2]^{5/6}} \quad (9)$$

And thus

$$E(k) = \frac{55\sigma^2 L}{9\pi} \frac{(aLk)^4}{[1 + (aLk)^2]^{17/6}} \quad (10)$$

A combination of Eqs. (7) and (10) yields

$$\phi_{11}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_1^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (11)$$

$$\phi_{22}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_2^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (12)$$

$$\phi_{33}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k^2 - k_3^2)}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (13)$$

A combination of Eqs (6), (11), (12), and (13) yields

$$\phi_{ii/jj}(k_1, k_2, k_3) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \frac{(k - k_i^2)k_j^2}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (14)$$

Eq (14) represents the three-dimensional shear spectral density function based on the von Karman spectrum.

3.3 DERIVATION OF TWO-DIMENSIONAL SHEAR SPECTRA

To obtain the two-dimensional spectra $\phi_{ii/jj}(k_1, k_2)$ integration over k_3 must be performed. Thus,

$$\phi_{11/22}(k_1, k_2) = \frac{55\sigma^2 a^4 L^5}{36\pi^2} \int_{-\infty}^{\infty} \frac{(k - k_1^2)k_2^2 dk_3}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (15)$$

By inspection $\phi_{11/22}$ is seen to be even. Thus

$$\phi_{11/22}(k_1, k_2) = \frac{55\sigma^2 a^4 L^5}{18\pi^2} \int_0^{\infty} \frac{(k_2^2 + k_3^2)k_2^2 dk_3}{[1 + a^2 L^2 (k_1^2 + k_2^2 + k_3^2)]^{17/6}} \quad (16)$$

To carry out the integration it is important to note that the beta function can be defined [5] as follows:

$$\beta\left(\frac{\kappa}{\alpha}, \lambda - \frac{\kappa}{\alpha}\right) = \alpha c^{\kappa/\alpha} d^{\lambda-\kappa/\alpha} \int_0^{\infty} \frac{t^{\kappa-1} dt}{(ct^{\alpha} + d)^{\lambda}} \quad (\alpha > 0, \lambda > \frac{\kappa}{\alpha} > 0, cd > 0) \quad (17)$$

Furthermore the beta function is related to the gamma function by the relation

$$\beta\left(\frac{\kappa}{\alpha}, \lambda - \frac{\kappa}{\alpha}\right) = \frac{\Gamma\left(\frac{\kappa}{\alpha}\right) \Gamma\left(\lambda - \frac{\kappa}{\alpha}\right)}{\Gamma(\lambda)} \quad (18)$$

It is also important to note that

$$\begin{aligned} a &= \frac{\Gamma\left(\frac{1}{3}\right)}{\Gamma\left(\frac{1}{2}\right) \Gamma\left(\frac{5}{6}\right)} \\ &= \frac{\Gamma\left(\frac{1}{3}\right)}{\sqrt{\pi} \Gamma\left(\frac{5}{6}\right)} \end{aligned} \quad (19)$$

Thus

$$\begin{aligned} \phi_{11/22}(k_1, k_2) &= \frac{55\sigma^2 a^4 L^5}{18\pi^2} \left\{ \frac{k_2^4 \beta\left(\frac{1}{2}, \frac{7}{3}\right)}{2(a^2 L^2)^{1/2} [1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \right. \\ &\quad \left. + \frac{k_2^2 \beta\left(\frac{3}{2}, \frac{4}{3}\right)}{2(a^2 L^2)^{3/2} [1 + a^2 L^2 (k_1^2 + k_2^2)]^{4/3}} \right\} \\ &= \frac{\sigma^2 a^2 L^2}{6\pi} \frac{k_2^2 [1 + a^2 L^2 (k_1^2 + 11k_2^2/3)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \end{aligned} \quad (20)$$

Likewise,

$$\phi_{11/11}(k_1, k_2) = \frac{\sigma^2 a^2 L^2}{6\pi} \frac{k_1^2 [1 + a^2 L^2 (k_1^2 + 11k_2^2/3)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (21)$$

$$\phi_{22/22}(k_1, k_2) = \frac{\sigma^2 a^2 L^2}{6\pi} \frac{k_2^2 [1 + a^2 L^2 (11k_1^2/3 + k_2^2)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (22)$$

$$\phi_{22/11}(k_1, k_2) = \frac{\sigma^2 a^2 L^2}{6\pi} \frac{k_1^2 [1 + a^2 L^2 (11k_1^2/3 + k_2^2)]}{[1 + a^2 L^2 (k_1^2 + k_2^2)]^{7/3}} \quad (23)$$

Other two-dimensional shear spectral density functions based on integration over k_2 can be obtained in a similar manner.

According to such development the two-dimensional spectra in terms of dimensionless wave number, K , can be written as follows:

$$\phi_{11/11}(K_1, K_n) = \frac{\sigma^2}{6\pi} \frac{K_1^2 (1 + K_1^2 + 11K_n^2/3)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (24)$$

$$\phi_{22/11}(K_1, K_n) = \frac{\sigma^2}{6\pi} \frac{K_1^2 (1 + 11K_1^2/3 + K_n^2)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (25)$$

$$\phi_{33/11}(K_1, K_n) = \frac{4\sigma^2}{9\pi} \frac{K_1^2 (K_1^2 + K_n^2)}{(1 + K_1^2 + K_n^2)^{7/3}} \quad (n = 2 \text{ or } 3) \quad (26)$$

$$\phi_{11/22}(K_1, K_2) = \frac{\sigma^2}{6\pi} \frac{K_2^2 (1 + K_1^2 + 11K_2^2/3)}{(1 + K_1^2 + K_2^2)^{7/3}} \quad (27)$$

$$\phi_{22/22}(K_1, K_2) = \frac{\sigma^2}{6\pi} \frac{K_2^2(1+11K_1^2/3 + K_2^2)}{(1+K_1^2+K_2^2)^{7/3}} \quad (28)$$

$$\phi_{33/22}(K_1, K_2) = \frac{4\sigma^2}{9\pi} \frac{K_2^2(K_1^2+K_2^2)}{(1+K_1^2+K_2^2)^{7/3}} \quad (29)$$

$$\phi_{11/33}(K_1, K_3) = \frac{\sigma^2}{6\pi} \frac{K_3^2(1+K_1^2+11K_3^2/3)}{(1+K_1^2+K_3^2)^{7/3}} \quad (30)$$

$$\phi_{22/33}(K_1, K_3) = \frac{\sigma^2}{6\pi} \frac{K_3^2(1+11K_1^2/3+K_3^2)}{(1+K_1^2+K_3^2)^{7/3}} \quad (31)$$

$$\phi_{33/33}(K_1, K_3) = \frac{4\sigma^2}{9\pi} \frac{K_3^2(K_1^2+K_3^2)}{(1+K_1^2+K_3^2)^{7/3}} \quad (32)$$

where $K_i = \alpha L k_i$

Eqs (24) through (32) represent the two-dimensional shear spectral density functions based on the von Karman spectrum.

3.4 DERIVATION OF ONE-DIMENSIONAL SHEAR SPECTRA

In order to obtain one-dimensional spectra, $\phi_{ii/jj}(K_1)$, Eqs (24) through (32) must be integrated over all values of K_2 or K_3 . For $\phi_{11/11}$, $\phi_{22/11}$ and $\phi_{33/11}$ this integration can be accomplished analytically by means of beta functions with the following results:

$$\phi_{11/11}(K_1) = \frac{\sigma^2 K_1^2}{\pi a^2 L (1+K_1^2)^{5/6}} \quad (33)$$

$$\phi_{22/11}(K_1) = \frac{\sigma^2 K_1^2 (1+8K_1^2/3)}{2\pi a^2 L (1+K_1^2)^{11/6}} \quad (34)$$

$$\phi_{33/11}(K_1) = \frac{\sigma^2 K_1^2 (1+8K_1^2/3)}{2\pi a^2 L (1+K_1^2)^{11/6}} \quad (35)$$

In attempting to integrate the remaining six spectral functions over all values of K_2 or K_3 it is observed that the numerators of the integrands contain terms of the order of K_2^4 or K_3^4 . For these cases

$$\lambda = \frac{7}{3}$$

$$\frac{\kappa}{\alpha} = \frac{5}{2}$$

and

$$\lambda < \frac{\kappa}{\alpha}$$

Thus, the integration of Eqs (27) through (32) cannot be represented as beta functions. Numerical integration reveals that definite integrals of such a form do not have a finite value when integrated from minus to plus infinity. In order to have a finite value some finite limits to the integrals must be established.

Before proceeding with any numerical integration, certain symmetrical features of the one-dimensional spectra $\phi_{ii/jj}$ should be considered

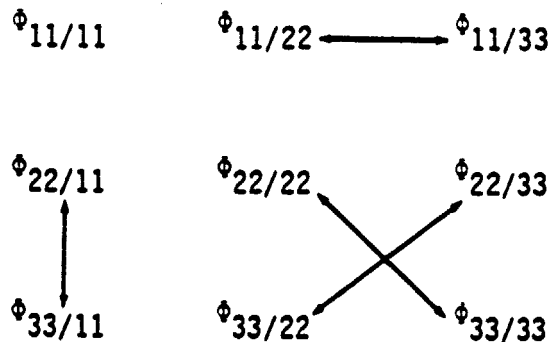
An examination of the two-dimensional spectra reveals that

$$\phi_{11/22}(K_1) = \phi_{11/33}(K_1) \quad (36)$$

$$\phi_{22/22}(K_1) = \phi_{33/33}(K_1) \quad (37)$$

$$\phi_{33/22}(K_1) = \phi_{22/33}(K_1) \quad (38)$$

Thus the one-dimensional spectra can be paired as follows:



Thus in the numerical integration process only $\phi_{11/22}$, $\phi_{22/22}$, $\phi_{33/22}$ need to be evaluated.

In carrying out such numerical integration, the integrand can be multiplied by 2 and the lower limit of integration can then be set to zero because the integrand is an even function. In this manner numerical integration of the two-dimensional shear spectral density functions for $\phi_{11/22}(K_1, K_2)$, $\phi_{22/22}(K_1, K_2)$, and $\phi_{33/22}(K_1, K_2)$ has been accomplished to obtain $\phi_{11/22}(K_1)$, $\phi_{22/22}(K_1)$, and $\phi_{33/22}(K_1)$. The values of K_1 for which the integration was performed ranged from 0 to 1000. The lower limit of K_2 was set at 0 while for the upper limit a series of values (.001, .01, .1, 1, 10, and 100) have been used. The results have been

plotted as $\phi_{ii/jj}$ versus K_1 as shown in Figures 3-1 through 3-3. The results indicate that the one-dimensional spectra obtained in such a manner are strongly dependent on the upper limit of K_2 .

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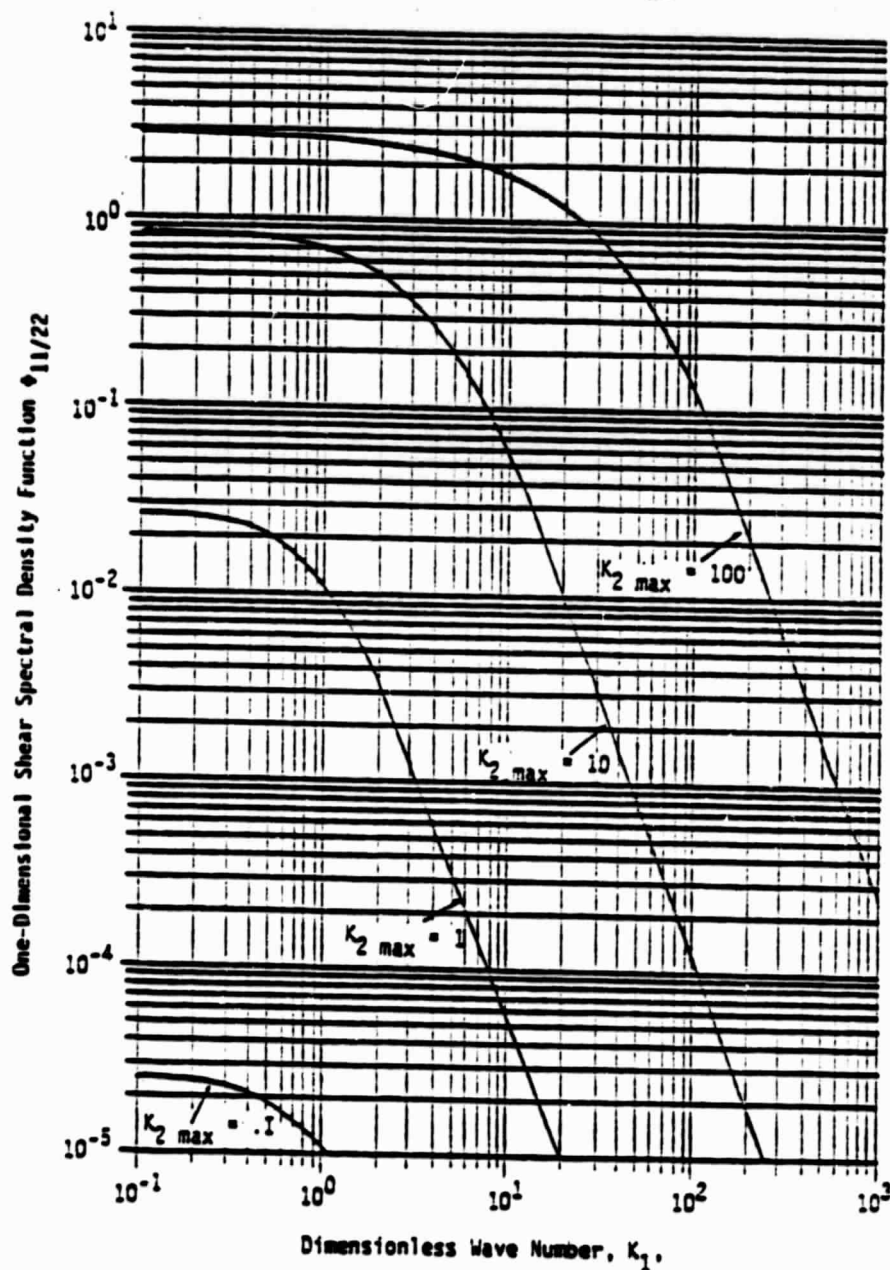


Figure 3-1. One-Dimensional Shear Spectral Density
Function $\phi_{11/22}(K_1)$

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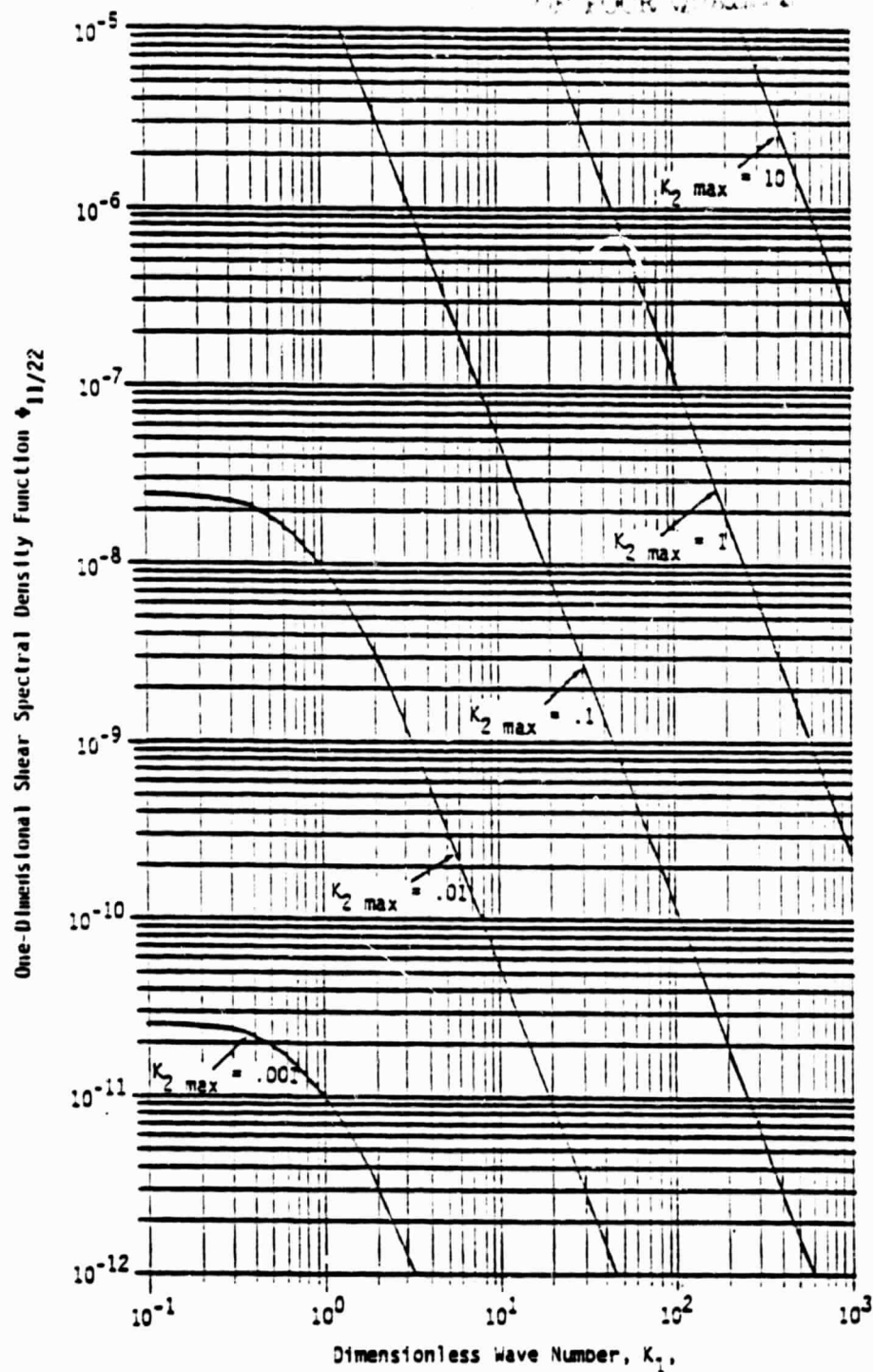


Figure 3-1. One-Dimensional Shear Spectral Density
Function $\phi_{11/22}(K_1)$ (Continued)

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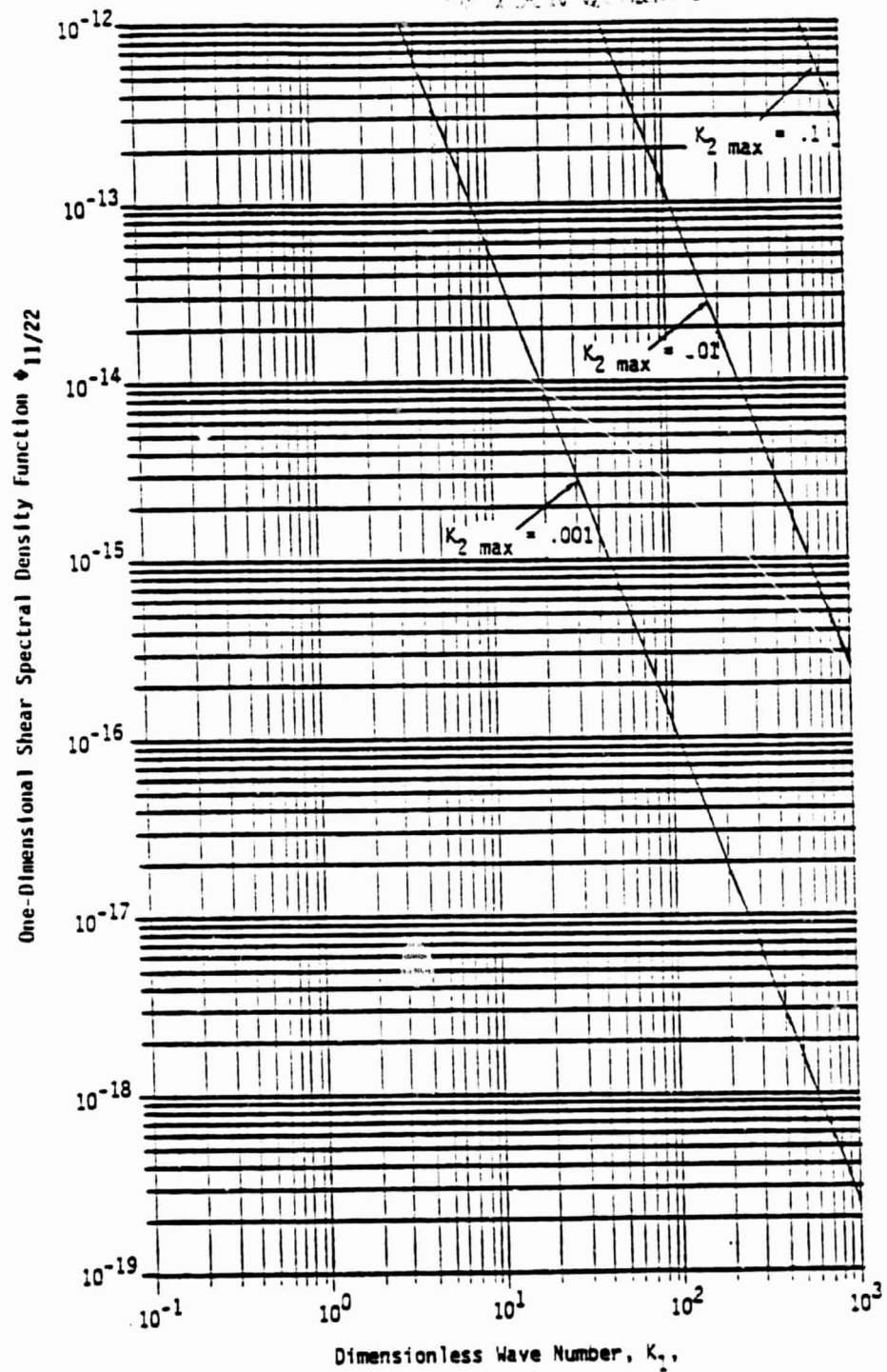


Figure 3-1. One-Dimensional Shear Spectral Density
Function $\phi_{11/22}(K_1)$ (Concluded)

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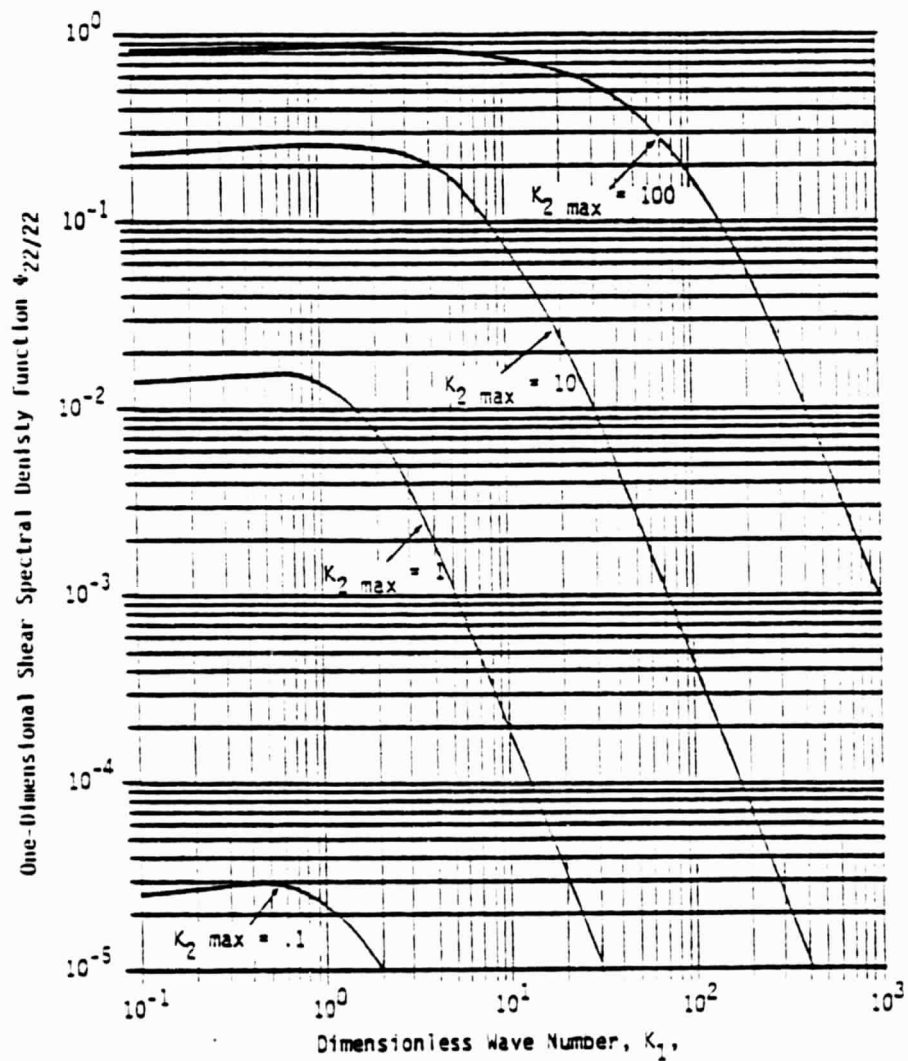


Figure 3-2. One-Dimensional Shear Spectral Density
Function $\phi_{22/22}(K_1)$

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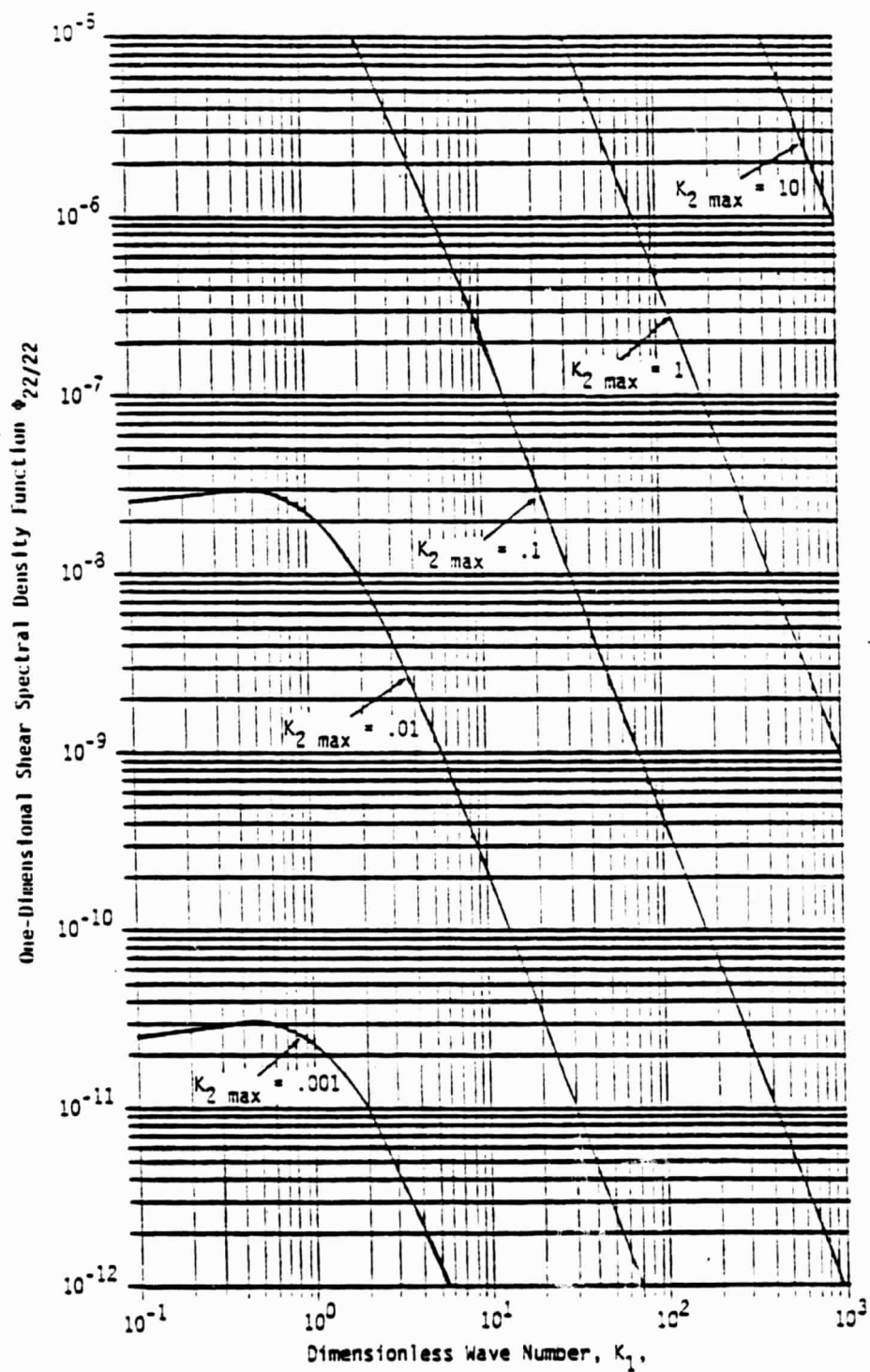


Figure 3-2. One-Dimensional Shear Spectral Density
Function $\phi_{22/22}$ (K_1) Continued)

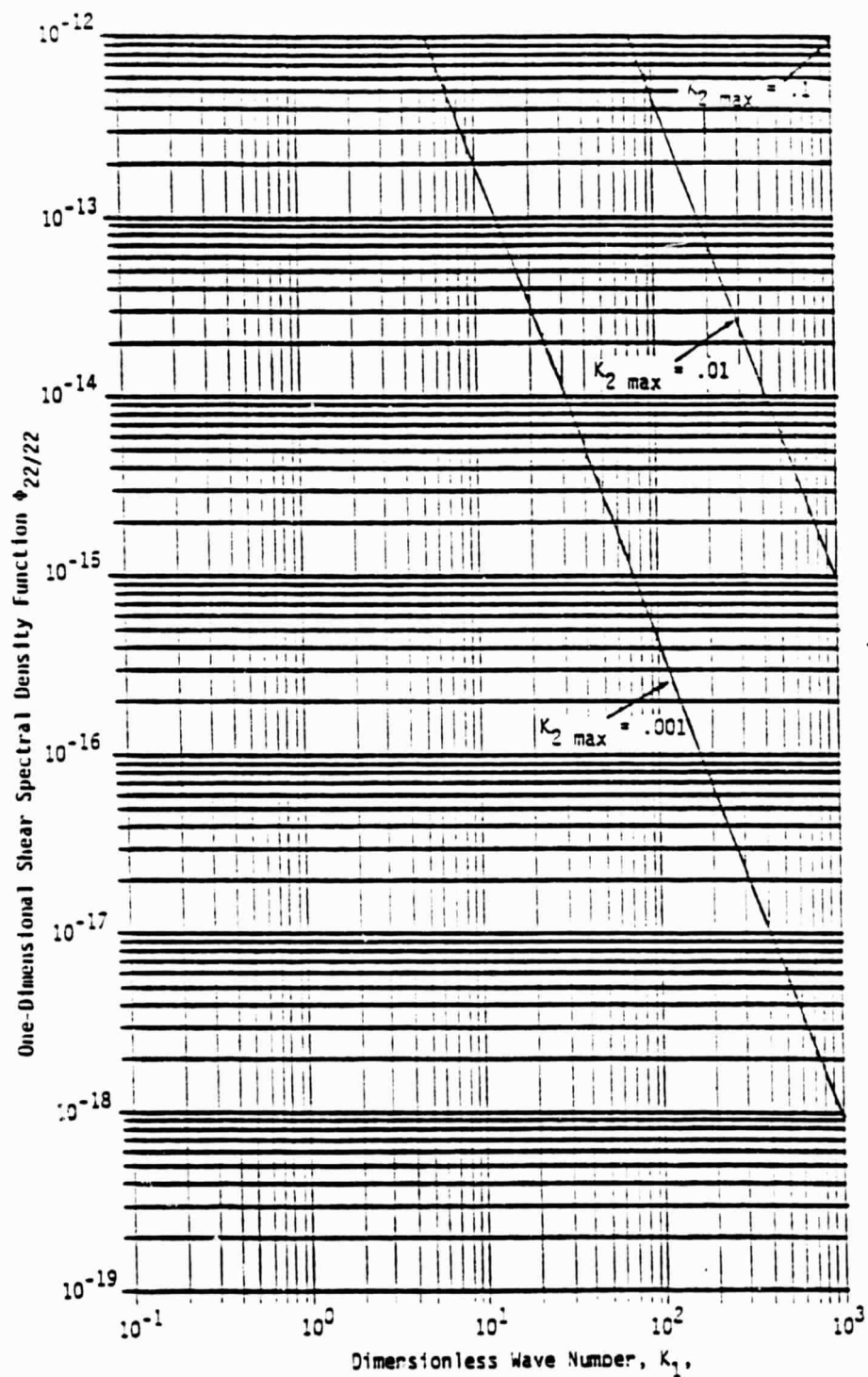


Figure 3-2. One-Dimensional Shear Spectral Density Function $\phi_{22/22}(K_1)$ (Concluded)

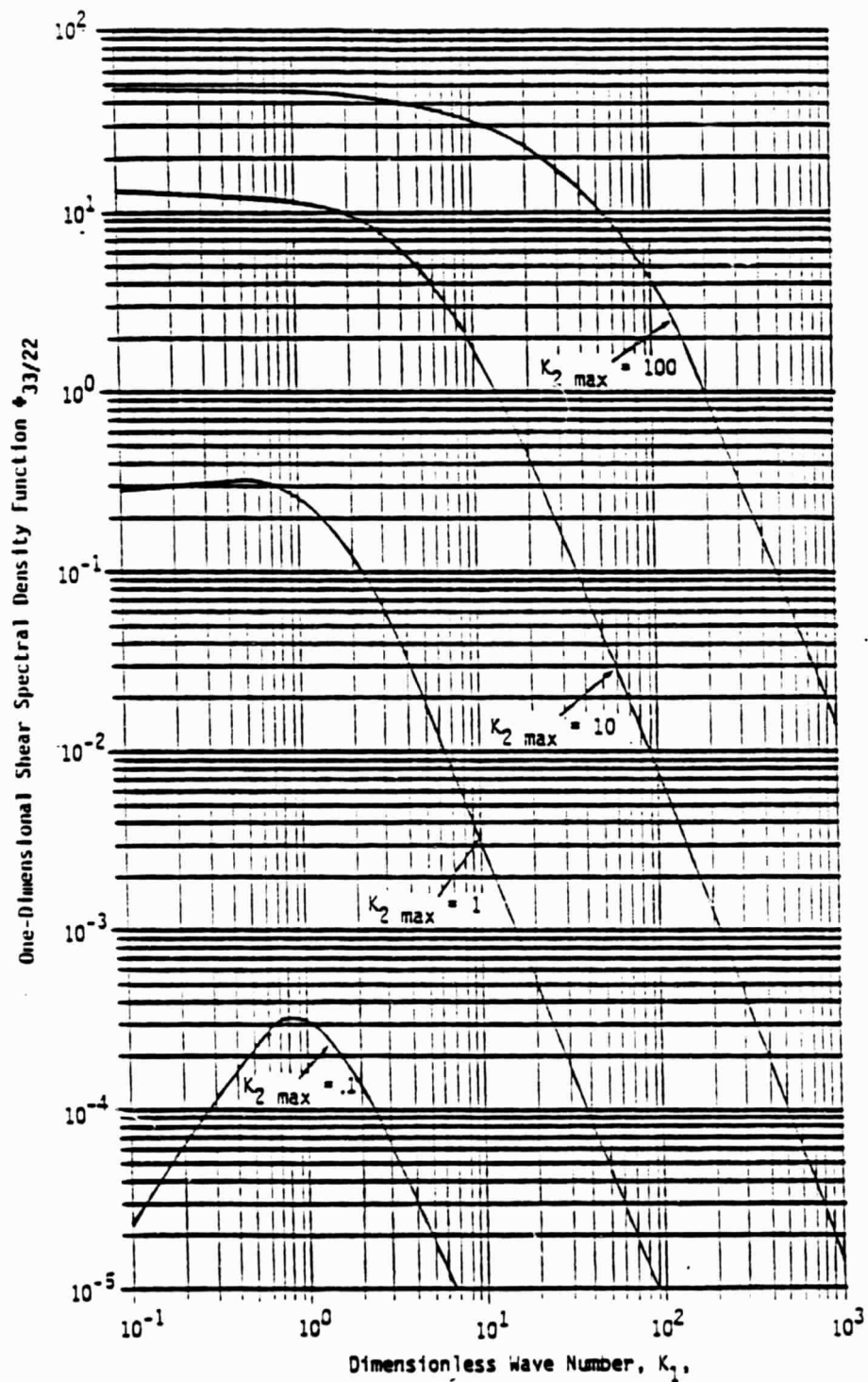


Figure 3-3. One-Dimensional Shear Spectral Density Function $\Phi_{33/22}(K_1)$

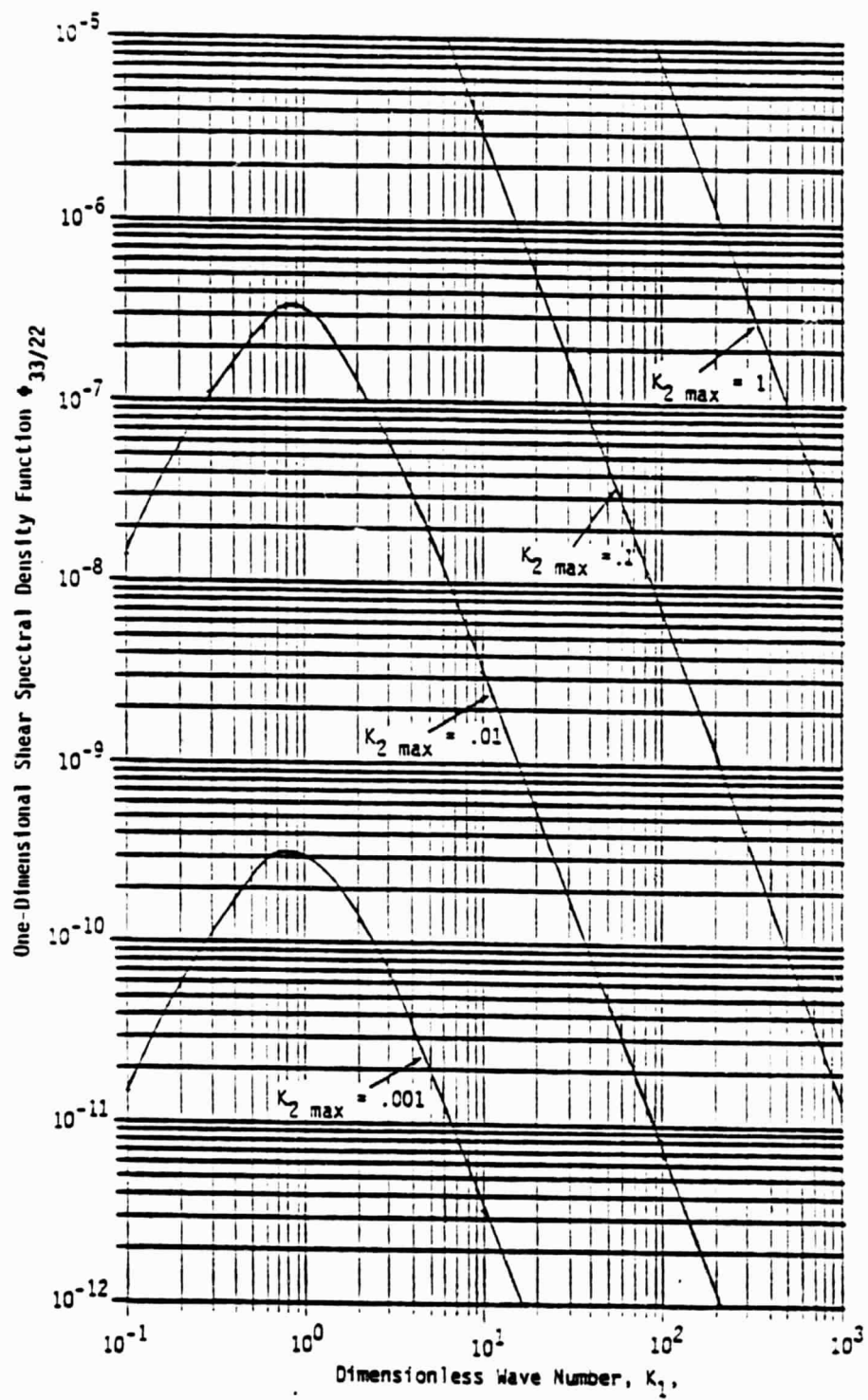


Figure 3-3. One-Dimensional Shear Spectral Density Function $\phi_{33/22}(K_1)$ (Continued)

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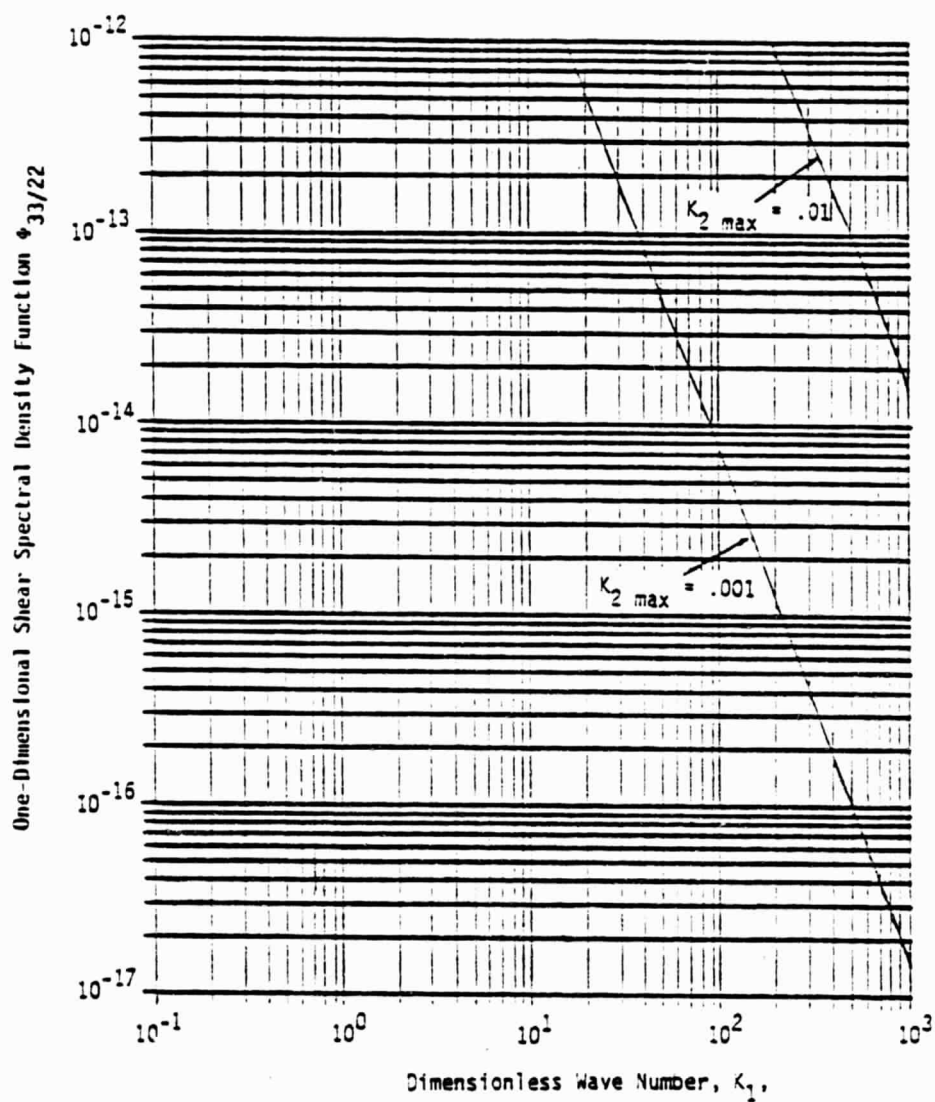


Figure 3-3. One-Dimensional Shear Spectral Density
Function $\phi_{33/22}(K_1)$ (Concluded)

4. REFERENCES CITED

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APPENDIX A

SAMPLE OUTPUT FROM TBMOD

As noted in subsection 2.4 the output from TBMOD consists of two parts. The first output is presented in Table A-1. The second output is presented in Table A-2.

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A-3

Table A-1. First Output (Continued)

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Table A-1. First Output (Continued)

..5035-01	..3725-01	..2251-01	..8595-31	..1595-30	..1959-33
..4983-31	..3137-00	..1435-01	..1829-33	..1377-30	..2953-01
..1158-33	..1111-00	..2003-03	..1552-33	..2233-30	..1417-03
..4350-03	..2525-00	..1611-00	..4753-32	..2395-30	..1717-30
..1225-01	..2253-01	..2136-03	..3532-31	..5328-31	..3935-33
..1805-00	..1712-01	..2136-01	..7273-31	..2592-37	..1223-03
..8296-31	..2904-02	..1297-03	..2957-33	..1595-31	..3753-01
..4354-01	..4945-01	..2795-03	..1544-33	..5753-31	..5232-01
..6398-32	..1214-00	..2499-03	..2250-33	..2719-30	..2547-01
..1274-01	..1220-00	..2139-03	..2313-33	..1443-30	..1225-33
..1977-03	..6726-01	..4413-01	..1954-30	..1365-33	..1313-03
..4398-32	..2251-03	..1839-01	..3311-31	..1775-33	..5922-01
..6747-01	..2333-00	..2449-03	..1797-30	..2751-30	..1534-03
..3431-01	..2506-30	..1995-03	..5395-32	..3771-31	..3211-03
..6127-31	..6788-31	..1824-03	..1352-33	..1479-33	..1479-33
..3681-00	..9546-01	..8479-01	..2137-30	..2342-30	..2453-03
..5439-32	..3212-00	..0135-01	..7526-31	..2712-30	..0399-33
..3752-03	..2231-00	..3232-01	..2594-30	..1105-31	..0399-33
..2567-01	..1413-00	..1099-03	..2435-33	..1283-31	..3531-00
..2540-33	..1927-00	..2873-00	..1233-30	..1477-30	..1540-00
..1971-01	..0267-01	..1805-00	..5753-32	..0302-31	..1497-03
..1355-00	..2943-00	..3399-00	..1193-30	..2329-30	..3213-03
..4120-00	..1922-00	..1639-03	..2425-30	..2575-30	..5655-01
..1415-02	..2279-30	..1553-03	..1273-30	..4353-30	..2119-33
..1214-00	..6529-01	..1993-00	..4553-33	..0729-30	..1024-03
..4132-30	..2500-01	..1956-00	..9933-32	..1317-30	..2535-03
..1772-00	..2410-00	..4935-00	..2332-33	..1335-30	..5257-00
..6229-33	..1374-00	..7331-02	..4303-30	..1192-32	..2235-01
..2912-30	..1530-00	..7094-01	..4411-30	..2693-31	..3225-03
..3250-00	..1193-01	..2337-31	..4375-31	..1343-30	..3233-01
..1795-00	..2905-00	..1951-03	..3232-30	..2591-30	..1792-03
..4321-03	..1364-00	..2193-00	..2355-33	..2132-30	..1739-03
..1353-01	..1502-00	..2437-01	..1539-33	..5500-30	..4625-03
..3532-00	..5739-01	..4774-03	..2336-33	..5365-31	..1992-03
..1939-00	..1558-33	..1572-03	..2233-30	..4914-30	..2717-03
..6370-00	..4750-33	..1863-01	..3329-30	..1253-30	..3279-03
..1378-00	..7179-00	..6357-03	..5397-33	..5553-30	..5199-33
..2922-00	..6955-03	..2679-00	..5333-33	..2387-30	..9113-03
..3155-03	..1753-00	..5829-01	..5752-30	..1577-31	..3499-01
..2223-03	..3424-00	..2491-33	..5332-30	..4777-30	..1733-01
..2452-33	..3943-00	..2643-01	..5359-33	..3354-30	..2113-03
..1531-00	..1305-30	..1259-00	..2931-33	..1355-30	..7759-31
..1952-31	..1216-01	..5365-00	..9273-31	..3727-30	..1325-00
..7595-33	..3538-00	..4295-00	..2724-30	..3443-30	..3252-33
..6537-00	..1134-01	..2563-03	..1757-30	..5373-33	..7219-33
..4771-00	..1226-01	..7151-03	..3317-30	..5172-31	..3553-01
..3344-33	..6103-00	..4343-03	..7351-30	..4921-30	..4011-03
..2529-30	..3214-00	..1159-01	..5493-30	..5967-30	..3447-03
..1113-31	..1319-01	..5575-03	..3524-30	..9339-30	..1259-30
..6249-00	..3939-00	..9113-03	..7517-31	..1243-31	..7131-03
..1245-31	..5770-01	..4703-03	..1393-30	..1549-31	..1279-33
..1233-01	..1766-01	..2399-01	..3371-31	..1343-31	..5523-31
..3051-01	..1949-01	..2339-01	..9332-30	..4505-31	..4137-00
..4799-01	..4323-01	..1476-01	..6325-30	..2319-31	..1559-03
..1453-31	..9300	..1222-02	..0333	..1589-32	..3703
	..4323-01	..5475-31	..5325-30	..2319-31	..1559-03

ORIGINAL PAGE IS
OF POOR QUALITY

Table A-1. First Output (Continued)

..1233.01	..1949.01	..2337.01	..2333.00	..4545.01	..4137.00
..1245.01	..1756.01	..2397.01	..3071.01	..1343.01	..5523.01
..6049.00	..5773.01	..9793.00	..1093.00	..1583.01	..1273.00
..1113.01	..3939.00	..9113.00	..9517.01	..1243.01	..9101.00
..2529.00	..1319.01	..5576.00	..3524.00	..9333.00	..1254.00
..3394.00	..3214.00	..1183.01	..5493.00	..5967.00	..9447.00
..9771.00	..5333.00	..4349.00	..7551.00	..4921.00	..4011.00
..6537.00	..1226.01	..7151.00	..3317.00	..5179.01	..3553.01
..7595.00	..1134.01	..2559.00	..1757.00	..3973.00	..7212.00
..3952.00	..3539.00	..4295.00	..2724.00	..3440.00	..3252.00
..3633.00	..1036.01	..5365.00	..9278.01	..3927.00	..1325.00
..2452.00	..1305.00	..1219.00	..2931.00	..1955.00	..7053.01
..2203.00	..3943.00	..2643.01	..5359.00	..3354.00	..2113.00
..3155.00	..3424.00	..2681.00	..5090.00	..4777.00	..1739.01
..2922.00	..1763.00	..5023.01	..5752.00	..1377.01	..3433.01
..1295.00	..6965.00	..2679.00	..6599.00	..2347.00	..9113.00
..1379.00	..7179.00	..6357.00	..4337.00	..5563.00	..5179.00
..6370.00	..4260.00	..1459.01	..3329.00	..1253.00	..3279.00
..1939.00	..1594.00	..1572.00	..2233.00	..3314.00	..2717.00
..3520.00	..5799.01	..4774.00	..2905.00	..5565.01	..1932.00
..1953.01	..1592.00	..2407.01	..1533.00	..5500.00	..4535.00
..4021.00	..1358.00	..2197.00	..2555.00	..2132.00	..1709.00
..1735.00	..2945.00	..1961.00	..3242.00	..2691.00	..1792.00
..3250.00	..1193.01	..2330.01	..4373.01	..1343.00	..3233.01
..2412.00	..1500.00	..7094.01	..4431.00	..2593.01	..3225.00
..6223.00	..1374.00	..7331.02	..4039.00	..1192.02	..7235.01
..1772.00	..2410.00	..4935.00	..2872.00	..1435.00	..5257.00
..4152.00	..2600.01	..1965.00	..9333.02	..1317.00	..2536.00
..1214.00	..5529.01	..1995.00	..4559.00	..4729.00	..1724.00
..1445.02	..2279.00	..1563.00	..1230.00	..4050.00	..2113.00
..4100.00	..1902.00	..1639.00	..2825.00	..2575.00	..5555.01
..1355.00	..2343.00	..1394.00	..1193.00	..2829.00	..3219.00
..3931.01	..8267.01	..1846.00	..6359.02	..4302.01	..1449.00
..2540.00	..1927.00	..2870.00	..1393.00	..1477.00	..1543.00
..2567.01	..1413.00	..1094.00	..2405.00	..1285.01	..2547.00
..3752.00	..2231.00	..3232.01	..2594.00	..1145.01	..3353.00
..5439.02	..3212.00	..4135.01	..7525.01	..2712.00	..4399.00
..3591.00	..9594.01	..4474.01	..2109.00	..2942.00	..2450.03
..6127.01	..5794.01	..1824.00	..1852.00	..4424.01	..1479.00
..3431.01	..2586.00	..1945.00	..5395.02	..3771.01	..3211.03
..6747.01	..2333.00	..2444.00	..1797.00	..2751.00	..1534.00
..4399.02	..2261.00	..1409.01	..1544.00	..5750.01	..5232.01
..1937.00	..6726.01	..4413.01	..2457.00	..1545.01	..9759.01
..1274.01	..1220.00	..2133.00	..7209.01	..2642.00	..1293.00
..6399.02	..1714.00	..2439.00	..3539.00	..5374.01	..3995.00
..4354.01	..3995.01	..2795.00	..9759.02	..2805.00	..1717.00
..4096.01	..2204.02	..1297.00	..1552.00	..2233.00	..1410.00
..1405.00	..7712.01	..9435.01	..1435.01	..1307.00	..7450.01
..1025.01	..9253.01	..2134.00	..3539.00	..2805.00	..7450.01
..4050.00	..2525.00	..1611.00	..9759.02	..2233.00	..1410.00
..1154.00	..1313.00	..2013.00	..1552.00	..2719.00	..3547.01
..4993.01	..3137.00	..1405.01	..1435.01	..5750.01	..5232.01
..5035.01	..3725.01	..2267.01	..4545.01	..1545.01	..9759.01
..7105.02	..2190.00	..6390.01	..5344.01	..5772.01	..5551.01
..3222.00	..1930.00	..1371.00	..9091.01	..2347.00	..2829.00
..1909.00	..1079.00	..3013.01	..6127.01	..1492.00	..1695.00

Table A-1. First Output (Concluded)

-.9355-01	.2572+00	-.1955+00	-.3331-01	-.5339-01	.1723-01
-.6999-01	.9173-01	.1351+00	.5125-01	-.5773-01	.5059-01
.2655-01	.1764+00	-.6395-01	.1331+00	.1393-01	.5711-01
-.3531-01	.2344+00	.3623-01	-.9224-01	.5392-01	.3529-01
-.1717+00	-.2736+00	.4439-01	.1593+00	-.1315+00	.1035+00
.3510+00	.7065-01	-.6825-01	.2564-01	-.5427-01	.1323+00
-.1327+00	.1357-02	-.1492+00	.6535-01	-.1203+00	.5975-01
-.4620-01	.1274+00	-.4395-02	-.5353-01	-.9334-01	.3554+00
.1963+00	.1672+00	-.1019+00	.1219+00	.3544-01	.1472+00
.5190-01	.2925+00	.9019-01	.1707+00	-.2141+00	.1554-01
-.7735-01	.1135+00	.2231-01	-.5593-01	.9504-01	-.1953+00
.5995-01	-.8498-01	-.2059+00	-.1743+00	-.4419-01	.1674-02
-.2290+00	-.7356-01	.2682-01	-.1145-00	-.1731+00	.1144+00
.1749+00	.1958-01	-.9773-01	.1531+00	-.1732+00	.1544+00
.3269-01	-.1447+00	.1258+00	.7433-01	-.9233-01	.9165-02
.4695-01	.2224-01	-.3909-01	.1351+00	-.2217+00	-.4472-01
.3439-01	.3241-01	-.9477-01	.1523-01	-.1303-01	.5993-01
.1313+00	-.4403-01	.1855-01	.7455-01	-.1343+00	-.4753-01
-.2529+00	.7397-01	-.6353-01	-.4163-01	-.7257-01	.1132+00
.4154-01	-.2216+00	.5019-01	-.2243+00	.9745-01	.4903-02
-.9927-01	.9690-01	.4337-03	.7533-01	-.1309+00	-.2059+00
.2373+00	.9596-01	-.9975-01	.3731-01	.3499-01	.9252-01
-.2330-01	.1561+00	.4635-02	.1231+00	-.5201-01	.1233+00
-.1523+00	.1164+00	.6744-01	-.1374+00	-.5719-01	-.1279+00
-.1158+00	-.5943-01	.2029+00	-.9289-01	.5393-01	-.2443-01
-.1337+00	-.4174-01	.9501-01	.2932-01	-.1344+00	.3311-01
-.3599-01	.3510-01	-.5032-01	-.4953-02	.2313-01	.1134+00
.6739-01	-.3297-01	.8112-01	.1453+00	.3135-01	.9429-01
-.1027+00	-.1910+00	-.1734+00	-.9125-02	-.2395-01	-.7421-01
-.1010-01	-.1502-01	.9345-02	.1443+00	.5163-01	-.1909-02
.4274-02	-.5144-01	.1373+00	-.5275-01	.2215-01	-.5943-01
-.4551-01	-.1311+00	-.2462-01	.6739-01	.1392-01	-.9123-01
-.1244+00	.4093-01	.7091-01	-.4373-01	-.9449-01	-.5506-01
-.5592-01	-.7545-01	.1225+00	-.1432+00	-.9355-02	-.7239-01
-.1950+00	.1269+00	.1027+00	.1332-02	.9342-02	-.1942+00
-.7073-02	-.1242+00	-.1394+00	.4353-01	.3593-01	-.5012-01
.1925-01	-.1110+00	-.5425-01	.1301-01	-.1357+00	-.9994-02
-.1123-01	.1117+00	.7432-01	-.1533+00	-.2312-02	.3000-01
.5517-01	-.2530-01	-.4019-01	.5321-01	-.4503-01	-.3574-01
-.2167-01	.5906-01	.2624-01	-.2710-01	-.7350-02	.5077-01
.1076+00	-.2594-01	.1137+00	.2136-01	-.5595-01	-.1554+00
.5593-02	.1133+00	-.1369+00	-.4755-01	-.1272+00	.7453-01

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Table A-2. Second Output

KP	X	Z	J	J	J
1	.0000000	.1200000+04	-.1377698+02	-.1293931+01	.1343826+02
2	.1000000+03	.1200000+04	-.1455655+02	.9753345+00	.1532009+02
3	.2000000+03	.1200000+04	-.1285410+02	.3757348+01	.2155997+02
4	.3000000+03	.1200000+04	-.1172807+02	.4925690+01	.2344057+02
5	.4000000+03	.1200000+04	-.1024376+02	.3225855+01	.2153991+02
6	.5000000+03	.1200000+04	-.9972147+01	-.1394359+01	.1759937+02
7	.6000000+03	.1200000+04	-.1250759+02	-.1393600+01	.1492919+02
8	.7000000+03	.1200000+04	-.1190853+02	-.3453139+00	.1679901+02
9	.8000000+03	.1200000+04	-.4392351+01	-.2474493+01	.1913077+02
10	.9000000+03	.1200000+04	.5343911+00	-.6161973+01	.1493889+02
11	.1000000+04	.1200000+04	-.2920559+01	-.4778005+01	.2413341+02
12	.1100000+04	.1200000+04	-.7517691+01	.1345972+01	.2997599+02
13	.1200000+04	.1200000+04	-.9503319+01	.3515225+01	.2542700+02
14	.1300000+04	.1200000+04	-.1163031+02	.5482769+01	.2171635+02
15	.1400000+04	.1200000+04	-.1335900+02	.4379347+01	.1931493+02
16	.1500000+04	.1200000+04	-.1348719+02	-.1100542+01	.1597274+02
17	.1600000+04	.1200000+04	-.1455693+02	-.4358555+01	.1176449+02
18	.1700000+04	.1200000+04	-.1531490+02	-.2204592+01	.1339527+02
19	.1800000+04	.1200000+04	-.1342732+02	.1565847+01	.1522994+02
20	.1900000+04	.1200000+04	-.1433975+02	.4711325+01	.1413859+02
21	.2000000+04	.1200000+04	-.1953435+02	.6909299+01	.1025323+02
22	.2100000+04	.1200000+04	-.1840015+02	.6421137+01	.7814713+01
23	.2200000+04	.1200000+04	-.1432407+02	.4501455+01	.5191575+01
24	.2300000+04	.1200000+04	-.1394911+02	.7005665+01	.2915905+01
25	.2400000+04	.1200000+04	-.1458022+02	.1331664+02	.1513931+01
26	.2500000+04	.1200000+04	-.1157954+02	.1702317+02	-.7163235+00
27	.2600000+04	.1200000+04	-.9541857+01	.1505199+02	-.2446670+01
28	.2700000+04	.1200000+04	-.1054943+02	.1350261+02	.3799644+00
29	.2800000+04	.1200000+04	-.1014100+02	.1133041+02	.5879409+01
30	.2900000+04	.1200000+04	-.7362016+01	.1011699+02	.8092919+01
31	.3000000+04	.1200000+04	-.6000759+01	.1228975+02	.5513917+01
32	.3100000+04	.1200000+04	-.5368930+01	.1710142+02	.3129557+01
33	.3200000+04	.1200000+04	-.3753299+01	.1985679+02	.4525371+01
34	.3300000+04	.1200000+04	-.3051942+01	.1939625+02	.5968624+01
35	.3400000+04	.1200000+04	-.3949905+01	.1959757+02	.3923255+01
36	.3500000+04	.1200000+04	-.4541195+01	.1587035+02	.7102827+01
37	.3600000+04	.1200000+04	-.5196991+01	.1253605+02	.2782600+01
38	.3700000+04	.1200000+04	-.7397290+01	.9799796+01	.1974479+01
39	.3800000+04	.1200000+04	-.8993452+01	.1076593+02	-.4229070+00
40	.3900000+04	.1200000+04	-.6690157+01	.9700300+01	-.2012099+01
41	.4000000+04	.1200000+04	-.1912507+01	.6599845+01	-.2354430+01
42	.4100000+04	.1200000+04	.4754875+00	.9095632+01	-.3729979+01
43	.4200000+04	.1200000+04	-.1484343+01	.1448074+02	-.4851435+01
44	.4300000+04	.1200000+04	-.5695255+01	.1330694+02	-.6129095+01
45	.4400000+04	.1200000+04	-.8772752+01	.9462973+01	-.8421026+01
46	.4500000+04	.1200000+04	-.7345829+01	.1157099+02	-.7134391+01
47	.4600000+04	.1200000+04	-.1589640+01	.1453440+02	-.7579325+01
48	.4700000+04	.1200000+04	.2246679+01	.1100573+02	-.6753356+01
49	.4800000+04	.1200000+04	.3309431+00	.5493213+01	-.7503741+01
50	.4900000+04	.1200000+04	-.2091052+01	.4066614+01	-.7574773+01
51	.5000000+04	.1200000+04	.3179012+00	.5006480+01	-.4452529+01
52	.5100000+04	.1200000+04	.4153491+01	.9593950+01	.1409459+01
53	.5200000+04	.1200000+04	.5554350+01	.1095260+02	.4229141+01
54	.5300000+04	.1200000+04	.6212049+01	.1146199+02	.9375000+00
55	.5400000+04	.1200000+04	.7030290+01	.1044862+02	-.2156972+01
56	.5500000+04	.1200000+04	.6305772+01	.9501229+01	-.8903330+00
57	.5600000+04	.1200000+04	.4528504+01	.6514405+01	.4091300+00
58	.5700000+04	.1200000+04	.3757209+01	.5527307+01	-.2549239+00
59	.5800000+04	.1200000+04	.3771353+01	.5875459+01	-.1992405+01
60	.5900000+04	.1200000+04	.5132959+01	.5759725+01	-.6292454+01
61	.6000000+04	.1200000+04	.8508932+01	.5508955+01	-.9513401+01
62	.6100000+04	.1200000+04	.1263322+02	.4377749+01	-.6754957+01
63	.6200000+04	.1200000+04	.1658659+02	.2114439+01	-.4951074+01
64	.6300000+04	.1200000+04	.2066175+02	-.4715469+00	-.9303939+01
65	.6400000+04	.1200000+04	.2302529+02	.1392644+01	-.1046537+02
66	.6500000+04	.1200000+04	.2144045+02	.7752509+01	-.4709610+01

Table A-2. Second Output (Continued)

67	.66000000+04	.12000000+04	.1750258+02	.1105291+02	-.1119992+01
68	.67000000+04	.12000000+04	.1543924+02	.1027699+02	-.6357402+00
69	.68000000+04	.12000000+04	.1523895+02	.1014201+02	-.7625903+01
70	.69000000+04	.12000000+04	.1741699+02	.1397306+02	.5803324+01
71	.70000000+04	.12000000+04	.2139314+02	.1794795+02	.4859145+01
72	.71000000+04	.12000000+04	.2155058+02	.1735419+02	.2111057+01
73	.72000000+04	.12000000+04	.1802654+02	.1519937+02	-.1303457+01
74	.73000000+04	.12000000+04	.1695152+02	.1530637+02	-.5017742+01
75	.74000000+04	.12000000+04	.2057937+02	.1332074+02	-.7449805+01
76	.75000000+04	.12000000+04	.2222808+02	.6315040+01	-.1045709+02
77	.76000000+04	.12000000+04	.1915235+02	.5274695+01	-.1365105+02
78	.77000000+04	.12000000+04	.1425391+02	.3979196+01	-.1197719+02
79	.78000000+04	.12000000+04	.1297754+02	.2490122+01	-.9314450+01
80	.79000000+04	.12000000+04	.1146922+02	.2535523+01	-.1004115+02
81	.80000000+04	.12000000+04	.1040742+02	-.1154532+01	-.1331734+02
82	.81000000+04	.12000000+04	.1077641+02	-.6483039+01	-.1155603+02
83	.82000000+04	.12000000+04	.9253630+01	-.8440100+01	-.8327059+01
84	.83000000+04	.12000000+04	.5907065+01	-.7931730+01	-.6559976+01
85	.84000000+04	.12000000+04	.5274334+01	-.1009513+02	-.3210620+01
86	.85000000+04	.12000000+04	.7449593+01	-.1213279+02	-.1797573+02
87	.86000000+04	.12000000+04	.9533553+01	-.1005255+02	-.1744434+01
88	.87000000+04	.12000000+04	.1205893+02	-.8520650+01	-.5955890+01
89	.88000000+04	.12000000+04	.1390855+02	-.9518245+01	-.7053598+01
90	.89000000+04	.12000000+04	.1170709+02	-.9153879+01	-.5855400+01
91	.90000000+04	.12000000+04	.7531543+01	-.9492251+01	-.7290334+01
92	.91000000+04	.12000000+04	.5942374+01	-.1302923+02	-.1197635+02
93	.92000000+04	.12000000+04	.6421159+01	-.1365167+02	-.1534937+02
94	.93000000+04	.12000000+04	.5655197+01	-.1151400+02	-.1575353+02
95	.94000000+04	.12000000+04	.4155153+01	-.1325535+02	-.1622939+02
96	.95000000+04	.12000000+04	.4977939+01	-.1494439+02	-.1651753+02
97	.96000000+04	.12000000+04	.8855354+01	-.1203376+02	-.1393759+02
98	.97000000+04	.12000000+04	.1345798+02	-.1167609+02	-.1012337+02
99	.98000000+04	.12000000+04	.1530629+02	-.1502945+02	-.7413943+01
100	.99000000+04	.12000000+04	.1754074+02	-.1377979+02	-.3437267+01
101	.10000000+05	.12000000+04	.1903900+02	-.9046297+01	.8522423+00
102	.10100000+05	.12000000+04	.1530259+02	-.5135156+01	.9553705+00
103	.10200000+05	.12000000+04	.1319959+02	-.2343435+01	-.3395535+01
104	.10300000+05	.12000000+04	.1222092+02	.1534231+01	-.9195776+01
105	.10400000+05	.12000000+04	.1343039+02	.4713340+00	-.1297290+02
106	.10500000+05	.12000000+04	.1373642+02	-.1941537+01	-.1122339+02
107	.10600000+05	.12000000+04	.1340212+02	.4550741+00	-.5473155+01
108	.10700000+05	.12000000+04	.1420950+02	.4542463+01	-.5207754+01
109	.10800000+05	.12000000+04	.1493293+02	.6925599+01	-.5759898+01
110	.10900000+05	.12000000+04	.1494902+02	.8444370+01	-.3070659+01
111	.11000000+05	.12000000+04	.1461201+02	.7323556+01	-.8424417+00
112	.11100000+05	.12000000+04	.1099827+02	.3973023+01	-.3309756+01
113	.11200000+05	.12000000+04	.4260570+01	-.5573089+00	-.6293274+01
114	.11300000+05	.12000000+04	.3712623+01	-.2999900+01	-.5935945+01
115	.11400000+05	.12000000+04	.1095347+02	-.1554382+01	-.4340915+01
116	.11500000+05	.12000000+04	.1355507+02	.2962284+01	-.4464024+01
117	.11600000+05	.12000000+04	.8192475+01	.5504865+01	-.5735252+01
118	.11700000+05	.12000000+04	.7034344+01	.4480282+01	-.3470179+01
119	.11800000+05	.12000000+04	.1295795+02	.2597568+01	.2319330+01
120	.11900000+05	.12000000+04	.1455916+02	.1777265+01	.4090240+01
121	.12000000+05	.12000000+04	.1157235+02	.2930796+01	-.2487015+01
122	.12100000+05	.12000000+04	.1332239+02	.6500361+01	-.5905723+01
123	.12200000+05	.12000000+04	.1810601+02	.7865491+01	-.2397636+01
124	.12300000+05	.12000000+04	.1955394+02	.3270215+01	-.4090240+01
125	.12400000+05	.12000000+04	.1977112+02	.2993919+00	.3425549+00
126	.12500000+05	.12000000+04	.1855559+02	.3209239+01	.1949007+01
127	.12600000+05	.12000000+04	.1851710+02	.4382491+01	.6606303+00
128	.12700000+05	.12000000+04	.2024204+02	.3394765+01	-.7633117+01
129	.12800000+05	.12000000+04	.2214735+02	.4790322+01	-.1904000+01
130	.12900000+05	.12000000+04	.1942257+02	.7270637+01	.8725525+00
131	.13000000+05	.12000000+04	.1590375+02	.4355539+01	.7543857+00
132	.13100000+05	.12000000+04	.1550197+02	.6535459+01	.5579613+00

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Table A-2. Second Output (Continued)

133	.1320000+05	.1200000+04	.1527915+02	-.1112430+01	.6777672+00
134	.1330000+05	.1200000+04	.1243233+02	-.3520070+01	.2411456+00
135	.1340000+05	.1200000+04	.1353652+02	-.6370529+01	.2825176+01
136	.1350000+05	.1200000+04	.9209415+01	-.6443621+01	.4695525+01
137	.1360000+05	.1200000+04	.4843339+01	-.4033046+01	-.7160139+00
138	.1370000+05	.1200000+04	.4330653+01	-.5215045+01	-.5294721+01
139	.1380000+05	.1200000+04	.9655652+01	-.6546462+01	-.1425135+01
140	.1390000+05	.1200000+04	.1376142+02	-.2318763+01	.2955647+01
141	.1400000+05	.1200000+04	.6450356+01	.1790339+01	.3553942+01
142	.1410000+05	.1200000+04	.4899815+01	-.5540221+00	.5899135+01
143	.1420000+05	.1200000+04	.5258913+01	-.2391533+01	.7341559+01
144	.1430000+05	.1200000+04	.3018251+01	.1425930+00	.4487199+01
145	.1440000+05	.1200000+04	.2056157+00	.1572669+01	.1852422+01
146	.1450000+05	.1200000+04	-.2479745+01	-.1307934+01	-.7625135+00
147	.1460000+05	.1200000+04	-.6241955+01	-.2560272+01	-.5347353+01
148	.1470000+05	.1200000+04	-.8232469+01	-.2114475+01	-.6095730+01
149	.1480000+05	.1200000+04	-.7553505+01	-.4839515+01	-.3205077+01
150	.1490000+05	.1200000+04	-.6819370+01	-.8431135+01	-.3851239+01
151	.1500000+05	.1200000+04	-.4632232+01	-.1005822+02	-.4147534+01
152	.1510000+05	.1200000+04	-.1305073+01	-.1180294+02	.1794539+01
153	.1520000+05	.1200000+04	-.4576634+00	-.1254575+02	.7047349+01
154	.1530000+05	.1200000+04	.2448356+00	-.1031629+02	.6825456+01
155	.1540000+05	.1200000+04	.4131174+01	-.8439019+01	.5394273+01
156	.1550000+05	.1200000+04	.6172074+01	-.8429028+01	.3481481+01
157	.1560000+05	.1200000+04	.3777144+01	-.8330768+01	.1121544+01
158	.1570000+05	.1200000+04	.4484189+01	-.8894909+01	.1900425+01
159	.1580000+05	.1200000+04	.1202159+02	-.9562992+01	.3119300+01
160	.1590000+05	.1200000+04	.1935232+02	-.7831656+01	.5951014+00
161	.1600000+05	.1200000+04	.1587179+02	-.5705444+01	-.7897083+00
162	.1610000+05	.1200000+04	.9085679+01	-.6475337+01	.2174028+01
163	.1620000+05	.1200000+04	.8537159+01	-.7795555+01	.4892719+01
164	.1630000+05	.1200000+04	.1439959+02	-.8339434+01	.6053211+01
165	.1640000+05	.1200000+04	.1538499+02	-.9351731+01	.7547815+01
166	.1650000+05	.1200000+04	.1209519+02	-.1045349+02	.8082466+01
167	.1660000+05	.1200000+04	.1160995+02	-.1358542+02	.7512829+01
168	.1670000+05	.1200000+04	.1346454+02	-.2015729+02	.7420973+01
169	.1680000+05	.1200000+04	.1251750+02	-.2372522+02	.5625447+01
170	.1690000+05	.1200000+04	.1013499+02	-.2070325+02	.2152704+01
171	.1700000+05	.1200000+04	.8077504+01	-.1725750+02	.2652115+00
172	.1710000+05	.1200000+04	.3793419+01	-.1531629+02	.5707145+01
173	.1720000+05	.1200000+04	-.1832900+00	-.1520685+02	.1934699+00
174	.1730000+05	.1200000+04	-.5259654+00	-.1364297+02	.1485130+01
175	.1740000+05	.1200000+04	-.2955697+00	-.2112345+02	.3459133+01
176	.1750000+05	.1200000+04	.5742445+00	-.1743633+02	.4633317+01
177	.1760000+05	.1200000+04	.3705190+01	-.1229695+02	.4932413+01
178	.1770000+05	.1200000+04	.2524347+01	-.1221230+02	.3641245+01
179	.1780000+05	.1200000+04	-.4785500+01	-.1094711+02	.1037745+01
180	.1790000+05	.1200000+04	-.8309187+01	-.4585352+01	-.3080351+00
181	.1800000+05	.1200000+04	-.6311423+01	-.1549505+01	-.1042749+01
182	.1810000+05	.1200000+04	-.6013855+01	-.5398807+01	-.3155557+01
183	.1820000+05	.1200000+04	-.5254923+01	-.1041884+02	-.3453132+01
184	.1830000+05	.1200000+04	-.7875699+00	-.1358706+02	.3785330+01
185	.1840000+05	.1200000+04	.5324730+00	-.1565523+02	.2948271+01
186	.1850000+05	.1200000+04	-.2527629+01	-.1795565+02	.3994854+01
187	.1860000+05	.1200000+04	-.1836234+01	-.2024519+02	.5574267+01
188	.1870000+05	.1200000+04	.2855242+01	-.1917746+02	.4654728+01
189	.1880000+05	.1200000+04	.5315787+01	-.1582438+02	-.1133710+01
190	.1890000+05	.1200000+04	.4415956+01	-.1548134+02	-.4439448+01
191	.1900000+05	.1200000+04	.1122013+01	-.1817044+02	-.1534511+01
192	.1910000+05	.1200000+04	-.3109471+01	-.1324807+02	.3453500+01
193	.1920000+05	.1200000+04	-.3511222+01	-.7757759+01	.4738951+01
194	.1930000+05	.1200000+04	.3378057+00	-.1080047+02	.5497692+01
195	.1940000+05	.1200000+04	.2972195+01	-.1502132+02	.7811459+01
196	.1950000+05	.1200000+04	.9004273+00	-.1378306+02	.6775976+01
197	.1960000+05	.1200000+04	-.3317555+01	-.1134989+02	.1005229+01
198	.1970000+05	.1200000+04	-.6588420+01	-.1059721+02	-.2217954+01

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
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199	.1990000+05	.1200000+04	-.5921791+01	-.1079705+02	.7894773+00
200	.1990000+05	.1200000+04	-.1719025+01	-.1253599+02	.3231535+01
201	.2000000+05	.1200000+04	.5822337+00	-.1312941+02	.3597445+00
202	.2010000+05	.1200000+04	-.1588032+01	-.1056077+02	-.3104945+01
203	.2020000+05	.1200000+04	-.3536074+01	-.9414032+01	-.4029375+01
204	.2030000+05	.1200000+04	-.1395449+01	-.1113405+02	-.5559035+01
205	.2040000+05	.1200000+04	.1715850+01	-.1201702+02	-.8291993+01
206	.2050000+05	.1200000+04	.8567151+00	-.1249539+02	-.9548879+01
207	.2060000+05	.1200000+04	-.3312886+01	-.1277305+02	-.1027932+02
208	.2070000+05	.1200000+04	-.5566157+01	-.9943755+01	-.1282957+02
209	.2080000+05	.1200000+04	-.3942013+01	-.7032914+01	-.1611662+02
210	.2090000+05	.1200000+04	-.2013927+01	-.7345833+01	-.1838535+02
211	.2100000+05	.1200000+04	-.4319445+01	-.6100463+01	-.1908435+02
212	.2110000+05	.1200000+04	-.1028001+02	-.2527894+01	-.1633754+02
213	.2120000+05	.1200000+04	-.1466342+02	-.1620237+01	-.1422001+02
214	.2130000+05	.1200000+04	-.1295888+02	-.9523063+00	-.1297629+02
215	.2140000+05	.1200000+04	-.8291796+01	.1514051+01	-.1235950+02
216	.2150000+05	.1200000+04	-.8539950+01	-.8155307+00	-.1241884+02
217	.2160000+05	.1200000+04	-.1278184+02	-.6972634+01	-.1310977+02
218	.2170000+05	.1200000+04	-.1427029+02	-.8419290+01	-.1237421+02
219	.2180000+05	.1200000+04	-.1340635+02	-.7974310+01	-.9837297+01
220	.2190000+05	.1200000+04	-.1487170+02	-.1117024+02	-.8939173+01
221	.2200000+05	.1200000+04	-.1852259+02	-.1143505+02	-.1022132+02
222	.2210000+05	.1200000+04	-.2247244+02	-.6027424+01	-.9237374+01
223	.2220000+05	.1200000+04	-.2337379+02	-.2775055+01	-.5325405+01
224	.2230000+05	.1200000+04	-.1744891+02	-.2427952+01	-.3419854+01
225	.2240000+05	.1200000+04	-.7307939+01	.9412232+00	-.4390948+01
226	.2250000+05	.1200000+04	-.2967171+01	.4323924+01	-.3911940+01
227	.2260000+05	.1200000+04	-.4070477+01	.3030415+01	-.1635601+01
228	.2270000+05	.1200000+04	-.7419071+01	.1352650+01	-.2094531+01
229	.2280000+05	.1200000+04	-.1208989+02	.1737725+01	-.4741523+01
230	.2290000+05	.1200000+04	-.1473921+02	-.5527431+00	-.5592350+01
231	.2300000+05	.1200000+04	-.1278751+02	-.5362193+01	-.4703443+01
232	.2310000+05	.1200000+04	-.1231139+02	-.5967279+01	-.4452933+01
233	.2320000+05	.1200000+04	-.1527955+02	-.2033325+00	-.4750971+01
234	.2330000+05	.1200000+04	-.1372202+02	.7070143+01	-.4749146+01
235	.2340000+05	.1200000+04	-.8476632+01	.1240170+02	-.3746757+01
236	.2350000+05	.1200000+04	-.8572053+01	.1443293+02	-.7072907+00
237	.2360000+05	.1200000+04	-.1117563+02	.1366256+02	-.2447886+01
238	.2370000+05	.1200000+04	-.8961417+01	.1318131+02	.1793641+01
239	.2380000+05	.1200000+04	-.6344945+01	.1420986+02	-.2202146+01
240	.2390000+05	.1200000+04	-.8298940+01	.1333449+02	-.4719423+01
241	.2400000+05	.1200000+04	-.1053663+02	.1158742+02	-.3114105+01
242	.2410000+05	.1200000+04	-.9594725+01	.1417491+02	.1951616+01
243	.2420000+05	.1200000+04	-.7473413+01	.1742603+02	.6963216+01
244	.2430000+05	.1200000+04	-.6830895+01	.1424461+02	.6870645+01
245	.2440000+05	.1200000+04	-.9885307+01	.9752435+01	.2256331+01
246	.2450000+05	.1200000+04	-.1344441+02	.1069956+02	-.1297963+01
247	.2460000+05	.1200000+04	-.1212113+02	.1193749+02	-.4267098+01
248	.2470000+05	.1200000+04	-.8639116+01	.1069323+02	-.1054683+02
249	.2480000+05	.1200000+04	-.8418233+01	.1254417+02	-.1500416+02
250	.2490000+05	.1200000+04	-.7933615+01	.1561094+02	-.1114054+02
251	.2500000+05	.1200000+04	-.4681095+01	.1427808+02	-.5057322+01
252	.2510000+05	.1200000+04	-.5226167+01	.1359765+02	-.4951547+01
253	.2520000+05	.1200000+04	-.8996572+01	.1710093+02	-.7321772+01
254	.2530000+05	.1200000+04	-.7586857+01	.1720040+02	-.6371658+01
255	.2540000+05	.1200000+04	-.2805447+01	.1158412+02	-.4015797+01
256	.2550000+05	.1200000+04	-.3146985+01	.9181364+01	-.3137334+01
257	.2560000+05	.1200000+04	-.6050907+01	.9495143+01	-.3259458+01
258	.2570000+05	.1200000+04	-.4056916+01	.1232329+02	-.4832274+01
259	.2580000+05	.1200000+04	-.5829636+00	.1446732+02	-.4174193+01
260	.2590000+05	.1200000+04	-.2301946+01	.1505670+02	-.1093102+02
261	.2600000+05	.1200000+04	-.5599905+01	.1527039+02	-.1202772+02
262	.2610000+05	.1200000+04	-.4523326+01	.1587405+02	-.1299414+02
263	.2620000+05	.1200000+04	-.2923963+01	.1308029+02	-.1347757+02
264	.2630000+05	.1200000+04	-.5689795+01	.7389844+01	-.1243431+02

Table A-2. Second Output (Continued)

265	.2640000+05	.1200000+04	-.9353879+01	.7375189+01	-.1290072+02
266	.2650000+05	.1200000+04	-.5221019+01	.1295189+02	-.1597953+02
267	.2660000+05	.1200000+04	-.2319055+01	.1332608+02	-.2052254+02
268	.2670000+05	.1200000+04	-.3421938+01	.8412125+01	-.1895942+02
269	.2680000+05	.1200000+04	-.5447639+01	.6190891+01	-.1379934+02
270	.2690000+05	.1200000+04	-.2553795+01	.5593307+01	-.1043047+02
271	.2700000+05	.1200000+04	.2597999+01	.3461553+01	-.1134139+02
272	.2710000+05	.1200000+04	.3352989+01	.3300919+01	-.1329230+02
273	.2720000+05	.1200000+04	-.6670951+00	.7495314+01	-.1297379+02
274	.2730000+05	.1200000+04	-.1929237+00	.8353423+01	-.8825477+01
275	.2740000+05	.1200000+04	.8353672+01	.4320679+01	-.4054159+01
276	.2750000+05	.1200000+04	.1395223+02	.2774344+01	-.1015677+01
277	.2760000+05	.1200000+04	.9291435+01	.2498979+01	.1043021+01
278	.2770000+05	.1200000+04	.2525337+01	.2742630+01	.1551752+01
279	.2780000+05	.1200000+04	-.1994755+00	.4937809+01	-.7117558+01
280	.2790000+05	.1200000+04	-.2574976+01	.7594853+01	-.1385735+01
281	.2800000+05	.1200000+04	-.4529139+01	.6395909+01	.4255179+01
282	.2810000+05	.1200000+04	-.3728017+01	.3310875+01	.3853419+01
283	.2820000+05	.1200000+04	-.4172803+01	.1520020+01	.6205303+01
284	.2830000+05	.1200000+04	-.6144604+01	.1533840+01	.5773295+01
285	.2840000+05	.1200000+04	-.4151550+01	-.8472623+00	.3139110+01
286	.2850000+05	.1200000+04	-.1123133+01	-.4195619+01	.3255949+01
287	.2860000+05	.1200000+04	-.3457996+01	-.4102663+01	.9255817+01
288	.2870000+05	.1200000+04	-.7587511+01	-.2235297+01	.1544119+02
289	.2880000+05	.1200000+04	-.8725605+01	-.3330429+01	.1555699+02
290	.2890000+05	.1200000+04	-.8451335+01	-.5575479+01	.1201933+02
291	.2900000+05	.1200000+04	-.9374399+01	-.4533340+01	.8491130+01
292	.2910000+05	.1200000+04	-.7709952+01	-.1320210+01	.6542691+01
293	.2920000+05	.1200000+04	-.6717449+01	-.4032373+00	.7783934+01
294	.2930000+05	.1200000+04	-.5354939+01	-.1130638+01	.1159655+02
295	.2940000+05	.1200000+04	-.5834713+01	-.3397792+00	.1351412+02
296	.2950000+05	.1200000+04	-.1122679+02	.1295841+01	.1191945+02
297	.2960000+05	.1200000+04	-.1554631+02	.1947741+01	.1052330+02
298	.2970000+05	.1200000+04	-.1584019+02	.2334794+01	.1275632+02
299	.2980000+05	.1200000+04	-.1463308+02	.3195329+01	.1755204+02
300	.2990000+05	.1200000+04	-.1813105+02	.2133575+01	.1952025+02
301	.3000000+05	.1200000+04	-.2099394+02	-.1377938+01	.1565112+02
302	.3010000+05	.1200000+04	-.2096452+02	-.5057369+01	.1108438+02
303	.3020000+05	.1200000+04	-.2159037+02	-.4830752+01	.1149919+02
304	.3030000+05	.1200000+04	-.2029210+02	-.4239594+01	.1413005+02
305	.3040000+05	.1200000+04	-.1365953+02	-.6122746+01	.1421135+02
306	.3050000+05	.1200000+04	-.8025035+01	-.8211693+01	.1239445+02
307	.3060000+05	.1200000+04	-.6682393+01	-.7957981+01	.1351577+02
308	.3070000+05	.1200000+04	-.4532973+01	-.7094402+01	.1592203+02
309	.3080000+05	.1200000+04	-.1357899+01	-.9371737+01	.2023900+02
310	.3090000+05	.1200000+04	-.2003295+01	-.1109321+02	.1973659+02
311	.3100000+05	.1200000+04	-.4317524+01	-.1232771+02	.1893350+02
312	.3110000+05	.1200000+04	-.3487397+01	-.1111521+02	.2397910+02
313	.3120000+05	.1200000+04	-.2738819+01	-.9551386+01	.2841501+02
314	.3130000+05	.1200000+04	-.7135925+01	-.5231027+01	.2257139+02
315	.3140000+05	.1200000+04	-.1315938+02	-.1755911+01	.1403227+02
316	.3150000+05	.1200000+04	-.1472842+02	.6715338+00	.1491635+02
317	.3160000+05	.1200000+04	-.1310315+02	.2595700+01	.2092274+02
318	.3170000+05	.1200000+04	-.1189936+02	.4780645+01	.2345494+02
319	.3180000+05	.1200000+04	-.1049852+02	.3302351+01	.2205213+02
320	.3190000+05	.1200000+04	-.9791142+01	-.4985030+00	.1823421+02
321	.3200000+05	.1200000+04	-.1217701+02	-.2194841+01	.1505419+02
322	.3210000+05	.1200000+04	-.1255302+02	-.4722704+00	.1630370+02
323	.3220000+05	.1200000+04	-.5742719+01	-.1335221+01	.1891290+02
324	.3230000+05	.1200000+04	.4375402+00	-.5910141+01	.1954743+02
325	.3240000+05	.1200000+04	-.1925575+01	-.5374790+01	.2313475+02
326	.3250000+05	.1200000+04	-.7078757+01	-.7392993+00	.2457291+02
327	.3260000+05	.1200000+04	-.7256029+01	.3164420+01	.2751205+02
328	.3270000+05	.1200000+04	-.1123352+02	.5330187+01	.2235503+02
329	.3280000+05	.1200000+04	-.1322825+02	.4519799+01	.1952756+02
330	.3290000+05	.1200000+04	-.1345659+02	-.2138070+00	.1663791+02

Table A-2. Second Output (Continued)

331	.3330000+05	.1200000+04	-.1439645+02	-.4217871+01	.1232429+02
332	.3310000+05	.1200000+04	-.1542327+02	-.2794492+01	.1284795+02
333	.3320000+05	.1200000+04	-.1371827+02	.1100016+01	.1605153+02
334	.3330000+05	.1200000+04	-.1392143+02	.4254698+01	.1475404+02
335	.3340000+05	.1200000+04	-.1906239+02	.6584254+01	.1077334+02
336	.3350000+05	.1200000+04	-.1998979+02	.6703541+01	.8169633+01
337	.3360000+05	.1200000+04	-.1485835+02	.4736929+01	.5541633+01
338	.3370000+05	.1200000+04	-.1354542+02	.6233194+01	.3191933+01
339	.3380000+05	.1200000+04	-.1459058+02	.1232094+02	.1844957+01
340	.3390000+05	.1200000+04	-.1227397+02	.1678961+02	-.2719574+00
341	.3400000+05	.1200000+04	-.9634529+01	.1543479+02	-.2412943+01
342	.3410000+05	.1200000+04	-.1244392+02	.1397716+02	-.3895656+00
343	.3420000+05	.1200000+04	-.1246117+02	.1166750+02	.5093399+01
344	.3430000+05	.1200000+04	-.7778017+01	.1014000+02	.8103070+01
345	.3440000+05	.1200000+04	-.6390458+01	.1167513+02	.6078258+01
346	.3450000+05	.1200000+04	-.5536902+01	.1535011+02	.3253133+01
347	.3460000+05	.1200000+04	-.4013322+01	.1959565+02	.4137596+01
348	.3470000+05	.1200000+04	-.3332534+01	.1955128+02	.5970500+01
349	.3480000+05	.1200000+04	-.3785538+01	.1869539+02	.4381819+01
350	.3490000+05	.1200000+04	-.4493939+01	.1733687+02	.2183982+01
351	.3500000+05	.1200000+04	-.4993610+01	.1328798+02	.2554573+01
352	.3510000+05	.1200000+04	-.6973579+01	.9922488+01	.2313924+01
353	.3520000+05	.1200000+04	-.8948697+01	.1257517+02	-.4153423+01
354	.3530000+05	.1200000+04	-.7331933+01	.1216933+02	-.1961523+01
355	.3540000+05	.1200000+04	-.2632882+01	.6871061+01	-.2232181+01
356	.3550000+05	.1200000+04	.3971157+00	.9230422+01	-.3495418+01
357	.3560000+05	.1200000+04	-.9434393+00	.1393877+02	-.4714638+01
358	.3570000+05	.1200000+04	-.5007720+01	.1396483+02	-.5836048+01
359	.3580000+05	.1200000+04	-.8539835+01	.9771142+01	-.8075557+01
360	.3590000+05	.1200000+04	-.7948104+01	.1299169+02	-.9221467+01
361	.3600000+05	.1200000+04	-.2582385+01	.1444077+02	-.7853178+01
362	.3610000+05	.1200000+04	.2270421+01	.1192672+02	-.6755171+01
363	.3620000+05	.1200000+04	.9925700+00	.6167521+01	-.7358428+01
364	.3630000+05	.1200000+04	-.1985473+01	.3999139+01	-.7724597+01
365	.3640000+05	.1200000+04	-.3227256+00	.5538603+01	-.5212941+01
366	.3650000+05	.1200000+04	.3680875+01	.8241804+01	.4913997+00
367	.3660000+05	.1200000+04	.5458859+01	.1370020+02	.4231699+01
368	.3670000+05	.1200000+04	.6255353+01	.1150814+02	.1575957+01
369	.3680000+05	.1200000+04	.6967009+01	.1267470+02	-.1977979+01
370	.3690000+05	.1200000+04	.6539113+01	.8738816+01	-.1241017+01
371	.3700000+05	.1200000+04	.4857405+01	.6303590+01	.3543955+00
372	.3710000+05	.1200000+04	.3827860+01	.5555851+01	-.8943211+01
373	.3720000+05	.1200000+04	.3709000+01	.5934308+01	-.1573062+01
374	.3730000+05	.1200000+04	.4777675+01	.5812711+01	-.5434085+01
375	.3740000+05	.1200000+04	.7871722+01	.5531480+01	-.9387539+01
376	.3750000+05	.1200000+04	.1199095+02	.5094181+01	-.7433921+01
377	.3760000+05	.1200000+04	.1594832+02	.2575500+01	-.4763246+01
378	.3770000+05	.1200000+04	.2004557+02	-.3053762+00	-.8503983+01
379	.3780000+05	.1200000+04	.2289320+02	.1134144+01	-.1085560+02
380	.3790000+05	.1200000+04	.2192954+02	.6853239+01	-.5722739+01
381	.3800000+05	.1200000+04	.1835672+02	.1086839+02	-.1324925+01
382	.3810000+05	.1200000+04	.1557218+02	.1251468+02	-.8147014+00
383	.3820000+05	.1200000+04	.1509729+02	.9904065+01	.1933032+01
384	.3830000+05	.1200000+04	.1689442+02	.1318100+02	.5552185+01
385	.3840000+05	.1200000+04	.2057148+02	.1757370+02	.5217243+01
386	.3850000+05	.1200000+04	.2192495+02	.1771795+02	.2573204+01
387	.3860000+05	.1200000+04	.1854894+02	.1539799+02	-.6998275+00
388	.3870000+05	.1200000+04	.1662235+02	.1524601+02	-.4499434+01
389	.3880000+05	.1200000+04	.1998943+02	.1402067+02	-.7106290+01
390	.3890000+05	.1200000+04	.2241849+02	.7569485+01	-.9858879+01
391	.3900000+05	.1200000+04	.1897102+02	.1074618+01	-.1336504+02
392	.3910000+05	.1200000+04	.1465363+02	.1208979+00	-.1259933+02
393	.3920000+05	.1200000+04	.1313379+02	.2204057+01	-.8639725+01
394	.3930000+05	.1200000+04	.1175362+02	.2764223+01	-.9417754+01
395	.3940000+05	.1200000+04	.1244297+02	-.3392638+00	-.1307137+02
396	.3950000+05	.1200000+04	.1074585+02	-.5751145+01	-.1211093+02

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
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397	.3960000+05	.1200000+04	.9715272+01	-.9431873+01	-.2715257+01
398	.3970000+05	.1200000+04	.6351131+01	-.7914480+01	-.6885511+01
399	.3980000+05	.1200000+04	.5108954+01	-.9573947+01	-.3891177+01
400	.3990000+05	.1200000+04	.7059538+01	-.1213332+02	-.2484319+00
401	.4000000+05	.1200000+04	.9300138+01	-.1054655+02	-.1142095+01
402	.4010000+05	.1200000+04	.1154775+02	-.8511077+01	-.5398324+01
403	.4020000+05	.1200000+04	.1373325+02	-.9457184+01	-.7159757+01
404	.4030000+05	.1200000+04	.1230848+02	-.9343706+01	-.5998803+01
405	.4040000+05	.1200000+04	.8108543+01	-.9162848+01	-.6772406+01
406	.4050000+05	.1200000+04	.5957218+01	-.1247716+02	-.1118634+02
407	.4060000+05	.1200000+04	.6358800+01	-.1391153+02	-.1575279+02
408	.4070000+05	.1200000+04	.5897038+01	-.1159431+02	-.1575528+02
409	.4080000+05	.1200000+04	.4319679+01	-.1274054+02	-.1609383+02
410	.4090000+05	.1200000+04	.4617331+01	-.1502652+02	-.1663582+02
411	.4100000+05	.1200000+04	.8116367+01	-.1255639+02	-.1443979+02
412	.4110000+05	.1200000+04	.1290145+02	-.1131493+02	-.1053421+02
413	.4120000+05	.1200000+04	.1598659+02	-.1452435+02	-.7951703+01
414	.4130000+05	.1200000+04	.1748074+02	-.1439989+02	-.4200260+01
415	.4140000+05	.1200000+04	.1808258+02	-.9719226+01	.3642595+00
416	.4150000+05	.1200000+04	.1674439+02	-.6539558+01	.1301004+01
417	.4160000+05	.1200000+04	.1353422+02	-.3105358+01	-.2525809+01
418	.4170000+05	.1200000+04	.1216115+02	.1270415+01	-.8293051+01
419	.4180000+05	.1200000+04	.1323389+02	.9574465+00	-.1268225+02
420	.4190000+05	.1200000+04	.1379285+02	-.1827450+01	-.1197575+02
421	.4200000+05	.1200000+04	.1339246+02	-.1975332+00	-.7112786+01
422	.4210000+05	.1200000+04	.1400093+02	.3995200+01	-.5117592+01
423	.4220000+05	.1200000+04	.1488770+02	.6524900+01	-.5838978+01
424	.4230000+05	.1200000+04	.1494671+02	.8276350+01	-.3650252+01
425	.4240000+05	.1200000+04	.1478637+02	.8159711+01	-.8873848+00
426	.4250000+05	.1200000+04	.1182475+02	.4725304+01	-.2710674+01
427	.4260000+05	.1200000+04	.4211827+01	-.6013795+01	-.6013795+01
428	.4270000+05	.1200000+04	.3100351+01	-.2336669+01	-.6172542+01
429	.4280000+05	.1200000+04	.9747935+01	-.2366686+01	-.4530139+01
430	.4290000+05	.1200000+04	.1394752+02	.2143313+01	-.4291534+01
431	.4300000+05	.1200000+04	.9133271+01	.5362942+01	-.5631703+01
432	.4310000+05	.1200000+04	.6547900+01	.4780514+01	-.4223245+01
433	.4320000+05	.1200000+04	.1202157+02	.2933020+01	.1874519+01
434	.4330000+05	.1200000+04	.1491370+02	.1344437+01	.4545684+01
435	.4340000+05	.1200000+04	.1192650+02	.2445319+01	-.1319734+01
436	.4350000+05	.1200000+04	.1251125+02	.5768446+01	-.5950903+01
437	.4360000+05	.1200000+04	.1755692+02	.8105412+01	-.3077238+01
438	.4370000+05	.1200000+04	.1952194+02	.4154342+01	-.1554652+00
439	.4380000+05	.1200000+04	.1885156+02	.3159549+00	.1927232+00
440	.4390000+05	.1200000+04	.1857703+02	.2501333+01	.1742953+01
441	.4400000+05	.1200000+04	.1855948+02	.4944857+01	.1180699+01
442	.4410000+05	.1200000+04	.1997013+02	.3559297+01	-.2459737+01
443	.4420000+05	.1200000+04	.2208994+02	.4305189+01	-.2371199+01
444	.4430000+05	.1200000+04	.2013324+02	.7130248+01	.6049699+00
445	.4440000+05	.1200000+04	.1610499+02	.5542913+01	.8850921+00
446	.4450000+05	.1200000+04	.1523605+02	.1190097+01	.4977655+00
447	.4460000+05	.1200000+04	.1554082+02	-.9051790+00	.7475412+00
448	.4470000+05	.1200000+04	.1304881+02	-.2975584+01	.1877745+00
449	.4480000+05	.1200000+04	.1063139+02	-.6491015+01	.2218551+01
450	.4490000+05	.1200000+04	.9652611+01	-.6810551+01	.4842792+01
451	.4500000+05	.1200000+04	.5533030+01	-.4251826+01	.4567447+00
452	.4510000+05	.1200000+04	.3865230+01	-.4302579+01	-.5143541+01
453	.4520000+05	.1200000+04	.8818576+01	-.6667893+01	-.2359610+01
454	.4530000+05	.1200000+04	.1112895+02	-.3257427+01	.2500173+01
455	.4540000+05	.1200000+04	.7118751+01	.1550761+01	.3440750+01
456	.4550000+05	.1200000+04	.4855925+01	.8939195+01	.5400294+01
457	.4560000+05	.1200000+04	.5338974+01	-.2900025+01	.7434502+01
458	.4570000+05	.1200000+04	.3507434+01	-.4841988+00	.5050158+01

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
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459	.4580000+05	.1200000+04	.5959635+00	.1320011+01	.2154548+01
460	.4590000+05	.1200000+04	-.1966334+01	-.7949969+02	-.1633278+02
461	.4600000+05	.1200000+04	-.5561313+01	-.2513773+01	-.4691855+01
462	.4610000+05	.1200000+04	-.8142129+01	-.2039998+01	-.6399214+01
463	.4620000+05	.1200000+04	-.7797396+01	-.4205753+01	-.3546731+01
464	.4630000+05	.1200000+04	-.6977923+01	-.7999659+01	-.3512656+01
465	.4640000+05	.1200000+04	-.5111333+01	-.9848536+01	-.4519648+01
466	.4650000+05	.1200000+04	-.1726854+01	-.1149636+02	.6197717+00
467	.4660000+05	.1200000+04	-.4333393+00	-.1254242+02	.6613813+01
468	.4670000+05	.1200000+04	-.8866632+01	-.1376677+02	.7054974+01
469	.4680000+05	.1200000+04	.3437774+01	-.8575772+01	.5593494+01
470	.4690000+05	.1200000+04	.6221248+01	-.8402354+01	.3899930+01
471	.4700000+05	.1200000+04	.4199815+01	-.8351134+01	.1353852+01
472	.4710000+05	.1200000+04	.3852118+01	-.8717584+01	.1572543+01
473	.4720000+05	.1200000+04	.1063737+02	-.9637477+01	.3169305+01
474	.4730000+05	.1200000+04	.1735635+02	-.8274701+01	.1121755+01
475	.4740000+05	.1200000+04	.1682337+02	-.5864170+01	-.9332499+02
476	.4750000+05	.1200000+04	.9974713+01	-.6219341+01	.1579812+01
477	.4760000+05	.1200000+04	.9032736+01	-.7555327+01	.4618398+01
478	.4770000+05	.1200000+04	.1345989+02	-.8234630+01	.5852424+01
479	.4780000+05	.1200000+04	.1653094+02	-.9183971+01	.7313253+01
480	.4790000+05	.1200000+04	.1333984+02	-.1324443+02	.8112602+01
481	.4800000+05	.1200000+04	.1143451+02	-.1283254+02	.7667885+01
482	.4810000+05	.1200000+04	.1326334+02	-.1933322+02	.7433631+01
483	.4820000+05	.1200000+04	.1298275+02	-.2365255+02	.6099655+01
484	.4830000+05	.1200000+04	.1045323+02	-.2141246+02	.2582680+01
485	.4840000+05	.1200000+04	.8505371+01	-.1763986+02	.4349223+02
486	.4850000+05	.1200000+04	.4634434+01	-.1541948+02	.6158193+01
487	.4860000+05	.1200000+04	.2052488+00	-.1511851+02	.1226539+02
488	.4870000+05	.1200000+04	-.6172775+00	-.1806852+02	.1187635+01
489	.4880000+05	.1200000+04	-.2725208+00	-.2105949+02	.3177256+01
490	.4890000+05	.1200000+04	.2384553+00	-.1839133+02	.4507432+01
491	.4900000+05	.1200000+04	.3262859+01	-.1278981+02	.4959479+01
492	.4910000+05	.1200000+04	.3273423+01	-.1203755+02	.3935133+01
493	.4920000+05	.1200000+04	-.3598613+01	-.1156786+02	.1426907+01
494	.4930000+05	.1200000+04	-.5279425+01	-.5727120+01	-.2133237+02
495	.4940000+05	.1200000+04	-.6653690+01	-.1511982+01	-.8331177+02
496	.4950000+05	.1200000+04	-.5901757+01	-.4552289+01	-.2817721+01
497	.4960000+05	.1200000+04	-.5688830+01	-.9733129+01	-.3704699+01
498	.4970000+05	.1200000+04	-.1513575+01	-.1313977+02	-.6154413+02
499	.4980000+05	.1200000+04	.7677426+00	-.1534412+02	.2673737+01
500	.4990000+05	.1200000+04	-.2096577+01	-.1753757+02	.3339443+01
501	.5000000+05	.1200000+04	-.2363191+01	-.2001345+02	.5337332+01
502	.5010000+05	.1200000+04	.2129934+01	-.1954404+02	.5184544+01
503	.5020000+05	.1200000+04	.5186321+01	-.1621536+02	-.1323853+02
504	.5030000+05	.1200000+04	.4726489+01	-.1505332+02	-.4873724+01
505	.5040000+05	.1200000+04	.1791237+01	-.1825874+02	-.2423242+01
506	.5050000+05	.1200000+04	-.2555654+01	-.1439416+02	.2892289+01
507	.5060000+05	.1200000+04	-.3919044+01	-.8335359+01	.4683129+01
508	.5070000+05	.1200000+04	-.3678484+00	-.9942564+01	.5221232+01
509	.5080000+05	.1200000+04	.2775525+01	-.1469619+02	.7539790+01
510	.5090000+05	.1200000+04	.1451297+01	-.1422989+02	.7348545+01
511	.5100000+05	.1200000+04	-.2629679+01	-.1161315+02	.1987683+01
512	.5110000+05	.1200000+04	-.6265554+01	-.1065356+02	-.2171159+01
513	.5120000+05	.1200000+04	-.6352659+01	-.1366643+02	.1052893+02
514	.5130000+05	.1200000+04	-.2424259+01	-.1221214+02	.3206125+01
515	.5140000+05	.1200000+04	.5484833+00	-.1328368+02	.1046258+01
516	.5150000+05	.1200000+04	-.1086469+01	-.1102662+02	-.2742437+01
517	.5160000+05	.1200000+04	-.3483325+01	-.9332972+01	-.3942426+01
518	.5170000+05	.1200000+04	-.1951790+01	-.1083943+02	-.5174719+01
519	.5180000+05	.1200000+04	.1400346+01	-.1197213+02	-.7934947+01
520	.5190000+05	.1200000+04	.1318555+01	-.1235666+02	-.9463647+01
521	.5200000+05	.1200000+04	-.2638293+01	-.1289417+02	-.1005759+02
522	.5210000+05	.1200000+04	-.5522933+01	-.1056294+02	-.1233975+02
523	.5220000+05	.1200000+04	-.4267022+01	-.7257883+01	-.1564527+02
524	.5230000+05	.1200000+04	-.2092605+01	-.7235979+01	-.1789971+02

Table A-2. Second Output (Continued)

525	.5240000+05	.1200000+04	-.3676423+01	-.6571744+01	-.1321992+02
526	.5250000+05	.1200000+04	-.0266092+01	-.3302594+01	-.1653949+02
527	.5260000+05	.1200000+04	-.1432825+02	-.1586602+01	-.1451126+02
528	.5270000+05	.1200000+04	-.1353378+02	-.1260741+01	-.1311724+02
529	.5280000+05	.1200000+04	-.8835037+01	.1256957+01	-.1242801+02
530	.5290000+05	.1200000+04	-.8068235+01	.2587226+01	-.1234194+02
531	.5300000+05	.1200000+04	-.1215433+02	-.6155583+01	-.1332934+02
532	.5310000+05	.1200000+04	-.1431660+02	-.8553377+01	-.1255155+02
533	.5320000+05	.1200000+04	-.1347137+02	-.7801787+01	-.1023214+02
534	.5330000+05	.1200000+04	-.1442581+02	-.1059792+02	-.8865272+01
535	.5340000+05	.1200000+04	-.1797737+02	-.1193478+02	-.1004579+02
536	.5350000+05	.1200000+04	-.2192215+02	-.6965928+01	-.9673111+01
537	.5360000+05	.1200000+04	-.2351587+02	-.2945462+01	-.5945729+01
538	.5370000+05	.1200000+04	-.1844945+02	-.2593034+01	-.3452524+01
539	.5380000+05	.1200000+04	-.9205601+01	.2055196+02	-.4220460+01
540	.5390000+05	.1200000+04	-.3247113+01	.4085515+01	-.4102542+01
541	.5400000+05	.1200000+04	-.3578776+01	.3439448+01	-.1895912+01
542	.5410000+05	.1200000+04	-.6783492+01	.1424865+01	-.1777579+01
543	.5420000+05	.1200000+04	-.1133733+02	.1720554+01	-.4359730+01
544	.5430000+05	.1200000+04	-.1466283+02	.1122132+02	-.5633297+01
545	.5440000+05	.1200000+04	-.1321651+02	-.4710090+01	-.4843197+01
546	.5450000+05	.1200000+04	-.1203347+02	-.6263653+01	-.4424907+01
547	.5460000+05	.1200000+04	-.1490117+02	-.1350805+01	-.4723934+01
548	.5470000+05	.1200000+04	-.1444147+02	.5939373+01	-.4789433+01
549	.5480000+05	.1200000+04	-.9118952+01	.1174715+02	-.4027546+01
550	.5490000+05	.1200000+04	-.8135434+01	.1439126+02	-.1305753+01
551	.5500000+05	.1200000+04	-.1101195+02	.1387246+02	.2153057+01
552	.5510000+05	.1200000+04	-.9572972+01	.1311116+02	.2222739+01
553	.5520000+05	.1200000+04	-.6459594+01	.1403041+02	-.1540751+01
554	.5530000+05	.1200000+04	-.7791196+01	.1367147+02	-.4573844+01
555	.5540000+05	.1200000+04	-.1037786+02	.1166115+02	-.3648603+01
556	.5550000+05	.1200000+04	-.9985210+01	.1348038+02	.1025715+01
557	.5560000+05	.1200000+04	-.7799155+01	.1725259+02	.6403157+01
558	.5570000+05	.1200000+04	-.6705042+01	.1511705+02	.7309605+01
559	.5580000+05	.1200000+04	-.9196346+01	.1013512+02	.3043629+01
560	.5590000+05	.1200000+04	-.1317135+02	.1030737+02	-.8966997+00
561	.5600000+05	.1200000+04	-.1267413+02	.1199177+02	-.3604025+01
562	.5610000+05	.1200000+04	-.9021220+01	.1080923+02	-.9415461+01
563	.5620000+05	.1200000+04	-.8300369+01	.1196970+02	-.1480913+02
564	.5630000+05	.1200000+04	-.8177503+01	.1537642+02	-.1220149+02
565	.5640000+05	.1200000+04	-.5113242+01	.1468166+02	-.5715387+01
566	.5650000+05	.1200000+04	-.4737590+01	.1335278+02	-.4590846+01
567	.5660000+05	.1200000+04	-.8557010+01	.1552941+02	-.7104888+01
568	.5670000+05	.1200000+04	-.8255197+01	.1767943+02	-.6735446+01
569	.5680000+05	.1200000+04	-.3371237+01	.1263789+02	-.4314297+01
570	.5690000+05	.1200000+04	-.2590635+01	.6370687+01	-.3186836+01
571	.5700000+05	.1200000+04	-.5812790+01	.9093464+01	-.3195731+01
572	.5710000+05	.1200000+04	-.4710834+01	.1193593+02	-.4437600+01
573	.5720000+05	.1200000+04	-.8674490+00	.1421997+02	-.7604872+01
574	.5730000+05	.1200000+04	-.1707401+01	.1505954+02	-.1062329+02
575	.5740000+05	.1200000+04	-.5301903+01	.1517535+02	-.1190047+02
576	.5750000+05	.1200000+04	-.4932673+01	.1585156+02	-.1282501+02
577	.5760000+05	.1200000+04	-.2907226+01	.1387297+02	-.1351792+02
578	.5770000+05	.1200000+04	-.5060357+01	.8137721+01	-.1265460+02
579	.5780000+05	.1200000+04	-.8023583+01	.6796564+01	-.1256837+02
580	.5790000+05	.1200000+04	-.5909220+01	.1207538+02	-.1518665+02
581	.5800000+05	.1200000+04	-.2246629+01	.1380592+02	-.2033609+02
582	.5810000+05	.1200000+04	-.2967940+01	.9169507+01	-.1955720+02
583	.5820000+05	.1200000+04	-.5376724+01	.6273813+01	-.1462531+02
584	.5830000+05	.1200000+04	-.3434900+01	.5902421+01	-.1065758+02
585	.5840000+05	.1200000+04	.1900916+01	.3902539+01	-.1073007+02
586	.5850000+05	.1200000+04	.3692410+01	.3407328+01	-.1300559+02
587	.5860000+05	.1200000+04	-.4721153+01	.6952174+01	-.1331357+02
588	.5870000+05	.1200000+04	-.9144636+00	.8333636+01	-.9635620+01
589	.5880000+05	.1200000+04	.6806239+01	.5365669+01	-.4708818+01
590	.5890000+05	.1200000+04	.1376769+02	.2927499+01	-.1406561+01

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
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591	.59300000+05	.12000000+04	.1048751+02	.2513541+01	.7559953+00
592	.59100000+05	.12000000+04	.3329433+01	.2515842+01	.1732635+01
593	.59200000+05	.12000000+04	.9175735+01	.4413971+01	.2855511+00
594	.59300000+05	.12000000+04	-.2122973+01	.7404953+01	-.1355059+01
595	.59400000+05	.12000000+04	-.4417232+01	.7321484+01	-.4912737+01
596	.59500000+05	.12000000+04	-.3913337+01	.3354272+01	.3325252+01
597	.59600000+05	.12000000+04	-.3877251+01	.1585392+01	.5986469+01
598	.59700000+05	.12000000+04	-.5992495+01	.1527703+01	.6055403+01
599	.59800000+05	.12000000+04	-.4752229+01	-.2512115+00	.3534922+01
600	.59900000+05	.12000000+04	-.1319696+01	-.3313114+01	.2834003+01
601	.60000000+05	.12000000+04	-.2759907+01	-.4372602+01	.8060464+01
602	.60100000+05	.12000000+04	-.7198876+01	-.2412736+01	.1479680+02
603	.60200000+05	.12000000+04	-.8741535+01	-.2934304+01	.1504124+02
604	.60300000+05	.12000000+04	-.8473530+01	-.5455613+01	.1255954+02
605	.60400000+05	.12000000+04	-.8417346+01	-.4977755+01	.8974705+01
606	.60500000+05	.12000000+04	-.7846573+01	-.1754059+01	.6694945+01
607	.60600000+05	.12000000+04	-.6899130+01	-.3515493+00	.7335291+01
608	.60700000+05	.12000000+04	-.5559604+01	-.1060021+01	.1099203+02
609	.60800000+05	.12000000+04	-.5445773+01	-.6341109+00	.1343144+02
610	.60900000+05	.12000000+04	-.1013678+02	.1071879+01	.1224695+02
611	.61000000+05	.12000000+04	-.1505948+02	.1911652+01	.1054631+02
612	.61100000+05	.12000000+04	-.1524128+02	.2221443+01	.1215309+02
613	.61200000+05	.12000000+04	-.1449993+02	.3103094+01	.1593122+02
614	.61300000+05	.12000000+04	-.1742059+02	.2535671+01	.1961202+02
615	.61400000+05	.12000000+04	-.2090473+02	-.1152759+01	.1553550+02
616	.61500000+05	.12000000+04	-.2097950+02	-.4793716+01	.1153884+02
617	.61600000+05	.12000000+04	-.2154675+02	-.5015921+01	.1112202+02
618	.61700000+05	.12000000+04	-.2090274+02	-.4179872+01	.1381955+02
619	.61800000+05	.12000000+04	-.1487229+02	-.5705947+01	.1438527+02
620	.61900000+05	.12000000+04	-.8578329+01	-.9017069+01	.1304215+02
621	.62000000+05	.12000000+04	-.6803855+01	-.9127967+01	.1321134+02
622	.62100000+05	.12000000+04	-.5051619+01	-.7130488+01	.1625595+02
623	.62200000+05	.12000000+04	-.1702054+01	-.9005154+01	.1991806+02
624	.62300000+05	.12000000+04	-.1526250+01	-.1058708+02	.2004137+02
625	.62400000+05	.12000000+04	-.4105729+01	-.1230673+02	.1973259+02
626	.62500000+05	.12000000+04	-.3795823+01	-.1143113+02	.2287474+02
627	.62600000+05	.12000000+04	-.2564199+01	-.9013545+01	.2830190+02
628	.62700000+05	.12000000+04	-.6132903+01	-.5301001+01	.2406746+02
629	.62800000+05	.12000000+04	-.1240730+02	-.2260235+01	.1496039+02
630	.62900000+05	.12000000+04	-.1441393+02	.3567379+00	.1415295+02
631	.63000000+05	.12000000+04	-.1337754+02	.2336241+01	.2007173+02
632	.63100000+05	.12000000+04	-.1275003+02	.4551326+01	.2337021+02
633	.63200000+05	.12000000+04	-.1076255+02	.4273946+01	.2247120+02
634	.63300000+05	.12000000+04	-.9691998+01	.1779155+01	.1897514+02
635	.63400000+05	.12000000+04	-.1159854+02	-.2262399+01	.1531451+02
636	.63500000+05	.12000000+04	-.1297693+02	-.6975379+00	.1584455+02
637	.63600000+05	.12000000+04	-.7118243+01	-.1293554+01	.1865022+02
638	.63700000+05	.12000000+04	-.1535952+01	-.5323433+01	.1949393+02
639	.63800000+05	.12000000+04	-.1100238+01	-.5853084+01	.2230747+02
640	.63900000+05	.12000000+04	-.6435154+01	-.1522225+01	.2797674+02
641	.64000000+05	.12000000+04	-.9034750+01	.2671290+01	.2827459+02
642	.64100000+05	.12000000+04	-.1084453+02	.5108475+01	.2310975+02
643	.64200000+05	.12000000+04	-.1303629+02	.5035659+01	.1992512+02
644	.64300000+05	.12000000+04	-.1345452+02	.6942894+00	.1725648+02
645	.64400000+05	.12000000+04	-.1413730+02	-.3917199+01	.1291966+02
646	.64500000+05	.12000000+04	-.1543793+02	-.3323576+01	.1235935+02
647	.64600000+05	.12000000+04	-.1405938+02	.5051044+00	.1573003+02
648	.64700000+05	.12000000+04	-.1340976+02	.3807134+01	.1529731+02
649	.64800000+05	.12000000+04	-.1736634+02	.6395299+01	.1134632+02
650	.64900000+05	.12000000+04	-.1922792+02	.6928998+01	.9519502+01
651	.65000000+05	.12000000+04	-.1549031+02	.4971440+01	.6089442+01
652	.65100000+05	.12000000+04	-.1351545+02	.5597003+01	.3485512+01
653	.65200000+05	.12000000+04	-.1468405+02	.1127458+02	.2052076+01
654	.65300000+05	.12000000+04	-.1285076+02	.1541650+02	.1612133+01
655	.65400000+05	.12000000+04	-.9791792+01	.1570057+02	-.2259974+01
656	.65500000+05	.12000000+04	-.1020944+02	.1438451+02	-.1055994+01

Table A-2. Second Output (Continued) ORIGINAL PAGE IS
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657	.6560000+05	.1200000+04	-.1059595+02	.1201826+02	.4215571+01
658	.6570000+05	.1200000+04	-.9231929+01	.1024569+02	.7997363+01
659	.6580000+05	.1200000+04	-.6215293+01	.1115464+02	.6621612+01
660	.6590000+05	.1200000+04	-.5572139+01	.1555973+02	.3513183+01
661	.6600000+05	.1200000+04	-.4298436+01	.1942116+02	.3778981+01
662	.6610000+05	.1200000+04	-.3056702+01	.1770689+02	.5863945+01
663	.6620000+05	.1200000+04	-.3614573+01	.1879941+02	.4825574+01
664	.6630000+05	.1200000+04	-.4435453+01	.1771729+02	.2353925+01
665	.6640000+05	.1200000+04	-.4847299+01	.1404183+02	.2499459+01
666	.6650000+05	.1200000+04	-.6566349+01	.1017346+02	.2586188+01
667	.6660000+05	.1200000+04	-.8831983+01	.1033510+02	.3175956+01
668	.6670000+05	.1200000+04	-.7884235+01	.1053474+02	-.1871965+01
669	.6680000+05	.1200000+04	-.3401625+01	.7294239+01	-.2146794+01
670	.6690000+05	.1200000+04	.1971292+00	.7514024+01	-.3233037+01
671	.6700000+05	.1200000+04	-.4683159+00	.1316021+02	-.4559224+01
672	.6710000+05	.1200000+04	-.4306975+01	.1449034+02	-.5583771+01
673	.6720000+05	.1200000+04	-.8139304+01	.1025220+02	-.7730415+01
674	.6730000+05	.1200000+04	-.8411574+01	.1028943+02	-.9232124+01
675	.6740000+05	.1200000+04	-.2592443+01	.1415939+02	-.8145553+01
676	.6750000+05	.1200000+04	.1683595+01	.1275687+02	-.6833695+01
677	.6760000+05	.1200000+04	.1405164+01	.6953493+01	-.7205623+01
678	.6770000+05	.1200000+04	-.1753163+01	.4328543+01	-.7797853+01
679	.6780000+05	.1200000+04	-.8985411+00	.5138419+01	-.5877459+01
680	.6790000+05	.1200000+04	.3134237+01	.7787246+01	-.4753476+00
681	.6800000+05	.1200000+04	.5334159+01	.1039185+02	.4047055+01
682	.6810000+05	.1200000+04	.5938239+01	.1151098+02	.2387457+01
683	.6820000+05	.1200000+04	.6863923+01	.1097977+02	-.1653381+01
684	.6830000+05	.1200000+04	.6735432+01	.9262710+01	-.1574314+01
685	.6840000+05	.1200000+04	.5126224+01	.7120084+01	.2551674+00
686	.6850000+05	.1200000+04	.3921225+01	.5724175+01	.6232533+01
687	.6860000+05	.1200000+04	.3673947+01	.5781717+01	-.1225712+01
688	.6870000+05	.1200000+04	.4479642+01	.5859372+01	-.4690741+01
689	.6880000+05	.1200000+04	.7261118+01	.5558117+01	-.9083597+01
690	.6890000+05	.1200000+04	.1133933+02	.5251754+01	-.9083159+01
691	.6900000+05	.1200000+04	.1531651+02	.3213429+01	-.4793329+01
692	.6910000+05	.1200000+04	.1943227+02	-.1330912+01	-.7661926+01
693	.6920000+05	.1200000+04	.2256380+02	.5100490+00	-.1104087+02
694	.6930000+05	.1200000+04	.2234659+02	.5891451+01	-.6773131+01
695	.6940000+05	.1200000+04	.1894135+02	.1054563+02	-.1656741+01
696	.6950000+05	.1200000+04	.1595993+02	.1074556+02	-.9106545+00
697	.6960000+05	.1200000+04	.1504517+02	.9782714+01	.1271589+01
698	.6970000+05	.1200000+04	.1543098+02	.1242530+02	.5193345+01
699	.6980000+05	.1200000+04	.1999811+02	.1707132+02	.5521007+01
700	.6990000+05	.1200000+04	.2235802+02	.1801711+02	.3034568+01
701	.7000000+05	.1200000+04	.1930637+02	.1567553+02	-.1124337+00
702	.7010000+05	.1200000+04	.1656036+02	.1516189+02	-.3943054+01
703	.7020000+05	.1200000+04	.1927091+02	.1456023+02	-.6764452+01
704	.7030000+05	.1200000+04	.2243065+02	.8322791+01	-.9299934+01
705	.7040000+05	.1200000+04	.1977363+02	.1786362+01	-.1295358+02
706	.7050000+05	.1200000+04	.1514368+02	-.6596603+01	-.1311776+02
707	.7060000+05	.1200000+04	.1328316+02	.1893219+01	-.9114925+01
708	.7070000+05	.1200000+04	.1233435+02	.2893979+01	-.8893871+01
709	.7080000+05	.1200000+04	.1053494+02	.4054169+00	-.1298394+02
710	.7090000+05	.1200000+04	.1067599+02	-.4938399+01	-.1263045+02
711	.7100000+05	.1200000+04	.1004717+02	-.8323456+01	-.9156035+01
712	.7110000+05	.1200000+04	.6879272+01	-.7973027+01	-.7153147+01
713	.7120000+05	.1200000+04	.5036431+01	-.9088346+01	-.4523732+01
714	.7130000+05	.1200000+04	.6666222+01	-.1195020+02	-.6287946+00
715	.7140000+05	.1200000+04	.9969958+01	-.1102051+02	-.6336800+00
716	.7150000+05	.1200000+04	.1123050+02	-.8502969+01	-.4753971+01
717	.7160000+05	.1200000+04	.1355768+02	-.9270552+01	-.7161613+01
718	.7170000+05	.1200000+04	.1292726+02	-.9511936+01	-.6194863+01
719	.7180000+05	.1200000+04	.8753742+01	-.4952664+01	-.6352996+01
720	.7190000+05	.1200000+04	.6067095+01	-.1186673+02	-.1037897+02
721	.7200000+05	.1200000+04	.6294510+01	-.1404935+02	-.1466010+02
722	.7210000+05	.1200000+04	.6101722+01	-.1198678+02	-.1577395+02

Table A-2. Second Output (Continued)

723	.7220000+05	.1200000+04	.4525554+01	-.1227072+02	-.1593709+02
724	.7230000+05	.1200000+04	.4345114+01	-.1494979+02	-.1567092+02
725	.7240000+05	.1200000+04	.7398193+01	-.1313786+02	-.1494679+02
726	.7250000+05	.1200000+04	.1213695+02	-.1110625+02	-.1114639+02
727	.7260000+05	.1200000+04	.1562115+02	-.1410518+02	-.8291055+01
728	.7270000+05	.1200000+04	.1733451+02	-.1488720+02	-.4926014+01
729	.7280000+05	.1200000+04	.1837432+02	-.1345815+02	-.2353775+00
730	.7290000+05	.1200000+04	.1713091+02	-.6933173+01	.1516239+01
731	.7300000+05	.1200000+04	.1411719+02	-.3820680+01	-.1756424+01
732	.7310000+05	.1200000+04	.1217736+02	.7532942+00	-.7359845+01
733	.7320000+05	.1200000+04	.1331533+02	.1395961+01	-.1224811+02
734	.7330000+05	.1200000+04	.1391757+02	-.1573274+01	-.1243994+02
735	.7340000+05	.1200000+04	.1341895+02	-.7324429+00	-.7843953+01
736	.7350000+05	.1200000+04	.1385789+02	.3392293+01	-.5113622+01
737	.7360000+05	.1200000+04	.1481453+02	.6306332+01	-.5914634+01
738	.7370000+05	.1200000+04	.1494955+02	.8366502+01	-.4226436+01
739	.7380000+05	.1200000+04	.1494837+02	.8400744+01	-.1074337+01
740	.7390000+05	.1200000+04	.1262959+02	.5441674+01	-.2151518+01
741	.7400000+05	.1200000+04	.6213630+01	.7575289+00	-.5646376+01
742	.7410000+05	.1200000+04	.2754307+01	-.2575732+01	-.6359561+01
743	.7420000+05	.1200000+04	.8456717+01	-.2479358+01	-.4751694+01
744	.7430000+05	.1200000+04	.1395999+02	.1395293+01	-.4171236+01
745	.7440000+05	.1200000+04	.1214692+02	.5108870+01	-.5454198+01
746	.7450000+05	.1200000+04	.6314903+01	.5052426+01	-.4827754+01
747	.7460000+05	.1200000+04	.1098620+02	.3191256+01	.8359055+00
748	.7470000+05	.1200000+04	.1530031+02	.1949218+01	.4750243+01
749	.7480000+05	.1200000+04	.1243231+02	.2153109+01	-.1135018+00
750	.7490000+05	.1200000+04	.1233357+02	.5336135+01	-.5753979+01
751	.7500000+05	.1200000+04	.1692259+02	.8158759+01	-.3744311+01
752	.7510000+05	.1200000+04	.1951499+02	.5036110+01	-.3556175+00
753	.7520000+05	.1200000+04	.1896171+02	.5246418+00	.9987575+01
754	.7530000+05	.1200000+04	.1958055+02	.1936443+01	.1477435+01
755	.7540000+05	.1200000+04	.1856139+02	.4382222+01	.1596045+01
756	.7550000+05	.1200000+04	.1944898+02	.3903006+01	-.1956692+01
757	.7560000+05	.1200000+04	.2193455+02	.3392406+01	-.2753747+01
758	.7570000+05	.1200000+04	.2077683+02	.6352051+01	.2424697+00
759	.7580000+05	.1200000+04	.1654404+02	.6150223+01	.1306341+01
760	.7590000+05	.1200000+04	.1597835+02	.1778317+01	.4659863+00
761	.7600000+05	.1200000+04	.1696956+02	-.7006013+00	.7767515+00
762	.7610000+05	.1200000+04	.1371227+02	-.2487232+01	.2153490+00
763	.7620000+05	.1200000+04	.1078041+02	-.6015657+01	.1649756+01
764	.7630000+05	.1200000+04	.9982240+01	-.7086315+01	.4791364+01
765	.7640000+05	.1200000+04	.6287206+01	-.4575077+01	.1585674+01
766	.7650000+05	.1200000+04	.3510132+01	-.4433921+01	-.4733167+01
767	.7660000+05	.1200000+04	.7896719+01	-.6624580+01	-.3264549+01
768	.7670000+05	.1200000+04	.1133056+02	-.4148291+01	.2013849+01
769	.7680000+05	.1200000+04	.7856159+01	.1115040+01	.3371202+01
770	.7690000+05	.1200000+04	.4900629+01	.6974909+00	.4912953+01
771	.7700000+05	.1200000+04	.5337822+01	-.2743629+01	.7385920+01
772	.7710000+05	.1200000+04	.3971291+01	-.1117955+01	.5630946+01
773	.7720000+05	.1200000+04	.1005053+01	.1813045+01	.2475792+01
774	.7730000+05	.1200000+04	-.1495233+01	-.2279999+00	.3511555+00
775	.7740000+05	.1200000+04	-.5047539+01	-.2583933+01	-.3955887+01
776	.7750000+05	.1200000+04	-.7966476+01	-.2056392+01	-.6555952+01
777	.7760000+05	.1200000+04	-.7940759+01	-.3619772+01	-.3994464+01
778	.7770000+05	.1200000+04	-.7114334+01	-.7500119+01	-.3216374+01
779	.7780000+05	.1200000+04	-.5566123+01	-.9641934+01	-.4693983+01
780	.7790000+05	.1200000+04	-.2216359+01	-.1118562+02	-.5339950+00
781	.7800000+05	.1200000+04	-.4435600+00	-.1264386+02	.6002269+01
782	.7810000+05	.1200000+04	-.3160383+00	-.1121116+02	.7266749+01
783	.7820000+05	.1200000+04	.2727156+01	-.8777730+01	.5904488+01
784	.7830000+05	.1200000+04	.6117043+01	-.9369339+01	.4260151+01
785	.7840000+05	.1200000+04	.4657902+01	-.5391950+01	.1671372+01
786	.7850000+05	.1200000+04	.3433223+01	-.8567383+01	.1293712+01
787	.7860000+05	.1200000+04	.9210873+01	-.9613338+01	.3099100+01
788	.7870000+05	.1200000+04	.1712255+02	-.9684026+01	.1646913+01

Table A-2. Second Output (Continued)

789	.79900000+05	.12000000+04	.1750491+02	-.6109967+01	-.4757752+00
790	.79900000+05	.12000000+04	.1100802+02	-.5999941+01	.9923654+00
791	.79900000+05	.12000000+04	.7591310+01	-.7491554+01	.4295750+01
792	.79100000+05	.12000000+04	.1244545+02	-.9145943+01	.5688835+01
793	.79200000+05	.12000000+04	.1551949+02	-.9999951+01	.7071134+01
794	.79300000+05	.12000000+04	.1397977+02	-.1006663+02	.8103214+01
795	.79400000+05	.12000000+04	.1137752+02	-.1213752+02	.7741555+01
796	.79500000+05	.12000000+04	.1298434+02	-.1795652+02	.7523654+01
797	.79600000+05	.12000000+04	.1318932+02	-.2337552+02	.6499754+01
798	.79700000+05	.12000000+04	.1090253+02	-.2209734+02	.3239483+01
799	.79900000+05	.12000000+04	.9572210+01	-.1303753+02	.5995724+00
800	.79900000+05	.12000000+04	.9393211+01	-.1551072+02	.6321096+01
801	.80000000+05	.12000000+04	.7058856+00	-.1509331+02	.8009070+01
802	.80100000+05	.12000000+04	-.6837331+00	-.1754137+02	.4135341+00
803	.80200000+05	.12000000+04	-.2505146+00	-.2082379+02	.2874042+01
804	.80300000+05	.12000000+04	-.7210493+02	-.1925490+02	.4351299+01
805	.80400000+05	.12000000+04	.2742033+01	-.1345451+02	.4950911+01
806	.80500000+05	.12000000+04	.3801457+01	-.1187335+02	.4279314+01
807	.80600000+05	.12000000+04	-.2343755+01	-.1201309+02	.1845311+01
808	.80700000+05	.12000000+04	-.2054318+01	-.6820196+01	-.8355804+01
809	.80800000+05	.12000000+04	-.7039705+01	-.1782557+01	-.6735209+00
810	.80900000+05	.12000000+04	-.5917030+01	-.3755017+01	-.2443322+01
811	.81000000+05	.12000000+04	-.5977444+01	-.8992658+01	-.3834355+01
812	.81100000+05	.12000000+04	-.2295335+01	-.1275719+02	-.1259850+01
813	.81200000+05	.12000000+04	.8382144+00	-.1503462+02	.2322556+01
814	.81300000+05	.12000000+04	-.1590973+01	-.1713743+02	.3659290+01
815	.81400000+05	.12000000+04	-.2745955+01	-.1970379+02	.5064520+01
816	.81500000+05	.12000000+04	.1352379+01	-.2001090+02	.5554329+01
817	.81600000+05	.12000000+04	.4961309+01	-.1570970+02	.9309251+00
818	.81700000+05	.12000000+04	.4978111+01	-.1573023+02	-.4544017+01
819	.81800000+05	.12000000+04	.2412900+01	-.1315656+02	-.3229222+01
820	.81900000+05	.12000000+04	-.1921004+01	-.1546442+02	.2199853+01
821	.82000000+05	.12000000+04	-.4081120+01	-.8895435+01	.4623953+01
822	.82100000+05	.12000000+04	-.1086803+01	-.9172525+01	.5010973+01
823	.82200000+05	.12000000+04	.2550019+01	-.1420305+02	.7140960+01
824	.82300000+05	.12000000+04	.1931479+01	-.1462496+02	.7753115+01
825	.82400000+05	.12000000+04	-.1929059+01	-.1193279+02	.3002017+01
826	.82500000+05	.12000000+04	-.5843272+01	-.1072593+02	-.1930499+01
827	.82600000+05	.12000000+04	-.6654209+01	-.1058290+02	-.5570987+00
828	.82700000+05	.12000000+04	-.3156436+01	-.1198372+02	.3018933+01
829	.82800000+05	.12000000+04	.3770916+00	-.1333176+02	.1691349+01
830	.82900000+05	.12000000+04	-.6058910+00	-.1151077+02	-.2293391+01
831	.83000000+05	.12000000+04	-.3306803+01	-.9353172+01	-.3851351+01
832	.83100000+05	.12000000+04	-.2453952+01	-.1052249+02	-.4840000+01
833	.83200000+05	.12000000+04	.9951934+00	-.1190422+02	-.7479422+01
834	.83300000+05	.12000000+04	.1666059+01	-.1225507+02	-.9347349+01
835	.83400000+05	.12000000+04	-.1930810+01	-.1292721+02	-.9907299+01
836	.83500000+05	.12000000+04	-.5319533+01	-.1115099+02	-.1182100+02
837	.83600000+05	.12000000+04	-.4665191+01	-.7593214+01	-.1514201+02
838	.83700000+05	.12000000+04	-.2278794+01	-.7104489+01	-.1755315+02
839	.83800000+05	.12000000+04	-.3044250+01	-.6943702+01	-.1830377+02
840	.83900000+05	.12000000+04	-.8240564+01	-.3553172+01	-.1702190+02
841	.84000000+05	.12000000+04	-.1382677+02	-.1599407+01	-.1492716+02
842	.84100000+05	.12000000+04	-.1409234+02	-.1481856+01	-.1327557+02
843	.84200000+05	.12000000+04	-.9508945+01	.6911949+00	-.1250951+02
844	.84300000+05	.12000000+04	-.7741756+01	.7092053+00	-.1229117+02
845	.84400000+05	.12000000+04	-.1145029+02	-.5212532+01	-.1292111+02
846	.84500000+05	.12000000+04	-.1427039+02	-.9589193+01	-.1283405+02
847	.84600000+05	.12000000+04	-.1359631+02	-.7757537+01	-.1055779+02
848	.84700000+05	.12000000+04	-.1403515+02	-.9989060+01	-.9872635+01
849	.84800000+05	.12000000+04	-.1732667+02	-.1218520+02	-.9424536+01
850	.84900000+05	.12000000+04	-.2134771+02	-.7944051+01	-.1000504+02

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

851	.85300000+05	.12000000+04	-.2358320+02	-.3235484+01	-.4635770+01
852	.85100000+05	.12000000+04	-.2313500+02	-.2571255+01	-.3585111+01
853	.85200000+05	.12000000+04	-.1371451+02	-.4898534+00	-.4028521+01
854	.85300000+05	.12000000+04	-.3735707+01	.3704271+01	-.4324551+01
855	.85400000+05	.12000000+04	-.3342635+01	.3313010+01	-.2224855+01
856	.85500000+05	.12000000+04	-.6189931+01	.1580555+01	-.1542625+01
857	.85600000+05	.12000000+04	-.1355134+02	.1546124+01	-.3934493+01
858	.85700000+05	.12000000+04	-.1443852+02	.6728812+00	-.5622931+01
859	.85800000+05	.12000000+04	-.1365375+02	-.3954719+01	-.4999935+01
860	.85900000+05	.12000000+04	-.1199635+02	-.6475645+01	-.4417539+01
861	.86000000+05	.12000000+04	-.1442120+02	-.2439639+01	-.4572944+01
862	.86100000+05	.12000000+04	-.1500359+02	.4852183+01	-.4811934+01
863	.86200000+05	.12000000+04	-.9901773+01	.1101261+02	-.4254189+01
864	.86300000+05	.12000000+04	-.7819830+01	.1421083+02	-.1875958+01
865	.86400000+05	.12000000+04	-.1073405+02	.1403771+02	.1732100+01
866	.86500000+05	.12000000+04	-.1013333+02	.1310105+02	.2541392+01
867	.86600000+05	.12000000+04	-.6715922+01	.1390947+02	-.8555949+00
868	.86700000+05	.12000000+04	-.7325171+01	.1394456+02	-.4320037+01
869	.86800000+05	.12000000+04	-.1312911+02	.1145291+02	-.4083173+01
870	.86900000+05	.12000000+04	-.1023903+02	.1285584+02	.1150835+00
871	.87000000+05	.12000000+04	-.8151593+01	.1591591+02	.5719303+01
872	.87100000+05	.12000000+04	-.6580608+01	.1593243+02	.7596673+01
873	.87200000+05	.12000000+04	-.8557559+01	.1058532+02	.3853554+01
874	.87300000+05	.12000000+04	-.1271385+02	.9954678+01	-.4471589+00
875	.87400000+05	.12000000+04	-.1313177+02	.1174135+02	-.3043180+01
876	.87500000+05	.12000000+04	-.9530435+01	.1131047+02	-.8289317+01
877	.87600000+05	.12000000+04	-.8201934+01	.1147339+02	-.1437544+02
878	.87700000+05	.12000000+04	-.8415757+01	.1500615+02	-.1314943+02
879	.87800000+05	.12000000+04	-.5525358+01	.1506326+02	-.6541788+01
880	.87900000+05	.12000000+04	-.4386329+01	.1325902+02	-.4334245+01
881	.88000000+05	.12000000+04	-.7999950+01	.1589864+02	-.6792103+01
882	.88100000+05	.12000000+04	-.8798929+01	.1795845+02	-.7042359+01
883	.88200000+05	.12000000+04	-.4071993+01	.1362247+02	-.4657400+01
884	.88300000+05	.12000000+04	-.2358320+02	.8735845+01	-.3252199+01
885	.88400000+05	.12000000+04	-.5437612+01	.8738326+01	-.3135850+01
886	.88500000+05	.12000000+04	-.5258255+01	.1143473+02	-.4100487+01
887	.88600000+05	.12000000+04	-.1298431+01	.1393096+02	-.7030483+01
888	.88700000+05	.12000000+04	-.1195273+01	.1502782+02	-.1026203+02
889	.88800000+05	.12000000+04	-.4885519+01	.1511024+02	-.1175880+02
890	.88900000+05	.12000000+04	-.5239727+01	.1581676+02	-.1255525+02
891	.89000000+05	.12000000+04	-.3023674+01	.1454213+02	-.1349454+02
892	.89100000+05	.12000000+04	-.4458755+01	.9031228+01	-.1286009+02
893	.89200000+05	.12000000+04	-.7827059+01	.6423409+01	-.1235739+02
894	.89300000+05	.12000000+04	-.6551920+01	.1117543+02	-.1541353+02
895	.89400000+05	.12000000+04	-.2509908+01	.1409203+02	-.1990856+02
896	.89500000+05	.12000000+04	-.2564983+01	.9995045+01	-.2009711+02
897	.89600000+05	.12000000+04	-.5175857+01	.6435555+01	-.1548334+02
898	.89700000+05	.12000000+04	-.4107342+01	.6036421+01	-.1107595+02
899	.89800000+05	.12000000+04	.1102510+01	.4190279+01	-.1048251+02
900	.89900000+05	.12000000+04	.3863082+01	.3139796+01	-.1256444+02
901	.90000000+05	.12000000+04	.6501834+00	.6341450+01	-.1351975+02
902	.90100000+05	.12000000+04	-.1375923+01	.8475112+01	-.1041607+02
903	.90200000+05	.12000000+04	.5243837+01	.5935649+01	-.5415099+01
904	.90300000+05	.12000000+04	.1327751+02	.3140223+01	-.1822259+01
905	.90400000+05	.12000000+04	.1158358+02	.2530678+01	.4632492+00
906	.90500000+05	.12000000+04	.4256351+01	.2538775+01	.1732753+01
907	.90600000+05	.12000000+04	.3985855+00	.3972280+01	.6351423+00
908	.90700000+05	.12000000+04	-.1687037+01	.7025249+01	-.1257288+01
909	.90800000+05	.12000000+04	-.4212439+01	.7045740+01	-.4581755+00
910	.90900000+05	.12000000+04	-.4114534+01	.4441870+01	.2773727+01
911	.91000000+05	.12000000+04	-.3561732+01	.1818260+01	.5655788+01
912	.91100000+05	.12000000+04	-.5735071+01	.1562390+01	.6252732+01
913	.91200000+05	.12000000+04	-.5287823+01	.2303007+00	.3982907+01
914	.91300000+05	.12000000+04	-.1658597+01	-.3350338+01	.2575172+01
915	.91400000+05	.12000000+04	-.2155184+01	-.4555356+01	.6909345+01
916	.91500000+05	.12000000+04	-.6595250+01	-.2556669+01	.1397797+02

Table A-2. Second Output (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

917	.9150000+05	.1200000+04	-.8713670+01	-.2571948+01	.1527055+02
918	.9170000+05	.1200000+04	-.8539852+01	-.5153049+01	.1333272+02
919	.9190000+05	.1200000+04	-.9442249+01	-.5340757+01	.9491555+01
920	.9190000+05	.1200000+04	-.7976939+01	-.2246072+01	.6903771+01
921	.9200000+05	.1200000+04	-.7057929+01	-.3529454+00	.6975755+01
922	.9210000+05	.1200000+04	-.5785837+01	-.9509789+00	.1035353+02
923	.9220000+05	.1200000+04	-.5198629+01	-.8397635+00	.1334039+02
924	.9230000+05	.1200000+04	-.9091063+01	.8173003+00	.1254059+02
925	.9240000+05	.1200000+04	-.1541359+02	.1959586+01	.1055442+02
926	.9250000+05	.1200000+04	-.1658557+02	.2132150+01	.1162956+02
927	.9260000+05	.1200000+04	-.1451869+02	.2974066+01	.1605193+02
928	.9270000+05	.1200000+04	-.1671845+02	.2346393+01	.1953414+02
929	.9280000+05	.1200000+04	-.2051019+02	-.4466779+00	.1735331+02
930	.9290000+05	.1200000+04	-.2102272+02	-.4415245+01	.1213219+02
931	.9300000+05	.1200000+04	-.2138253+02	-.5173457+01	.1083393+02
932	.9310000+05	.1200000+04	-.2134734+02	-.4194377+01	.1343848+02
933	.9320000+05	.1200000+04	-.1677945+02	-.5312496+01	.1453399+02
934	.9330000+05	.1200000+04	-.9275049+01	-.7755157+01	.1323401+02
935	.9340000+05	.1200000+04	-.6915127+01	-.8265111+01	.1295759+02
936	.9350000+05	.1200000+04	-.5528810+01	-.7222349+01	.1563217+02
937	.9360000+05	.1200000+04	-.2137342+01	-.7593290+01	.1942234+02
938	.9370000+05	.1200000+04	-.1331937+01	-.1024629+02	.2029336+02
939	.9380000+05	.1200000+04	-.3801819+01	-.1221576+02	.1873052+02
940	.9390000+05	.1200000+04	-.4069637+01	-.1170964+02	.2182571+02
941	.9400000+05	.1200000+04	-.2533652+01	-.9455806+01	.2794927+02
942	.9410000+05	.1200000+04	-.5213821+01	-.6359103+01	.2544441+02
943	.9420000+05	.1200000+04	-.1153751+02	-.2792433+01	.1609395+02
944	.9430000+05	.1200000+04	-.1479141+02	.2232993+01	.1357806+02
945	.9440000+05	.1200000+04	-.1366916+02	.1994950+01	.1912849+02
946	.9450000+05	.1200000+04	-.1221934+02	.4255854+01	.2317545+02
947	.9460000+05	.1200000+04	-.1102055+02	.4627689+01	.2231493+02
948	.9470000+05	.1200000+04	-.9700199+01	.9342347+00	.1965194+02
949	.9480000+05	.1200000+04	-.1121275+02	-.2212325+01	.1569979+02
950	.9490000+05	.1200000+04	-.1318418+02	-.9915712+00	.1545204+02
951	.9500000+05	.1200000+04	-.8432231+00	-.8432231+00	.1931044+02
952	.9510000+05	.1200000+04	-.7177939+00	-.4730560+01	.1939855+02
953	.9520000+05	.1200000+04	-.3893175+00	-.6190573+01	.2153285+02
954	.9530000+05	.1200000+04	-.5699349+01	-.2322013+01	.2721911+02
955	.9540000+05	.1200000+04	-.8799579+01	.2132542+01	.2877545+02
956	.9550000+05	.1200000+04	-.1047695+02	.4829975+01	.2393505+02
957	.9560000+05	.1200000+04	-.1278335+02	.5328079+01	.2024079+02
958	.9570000+05	.1200000+04	-.1346443+02	.1593194+01	.1789030+02
959	.9580000+05	.1200000+04	-.1393913+02	-.3462311+01	.1343531+02
960	.9590000+05	.1200000+04	-.1536252+02	-.3757511+01	.1201729+02
961	.9600000+05	.1200000+04	-.1444171+02	-.1155505+00	.1528675+02
962	.9610000+05	.1200000+04	-.1320714+02	.3337559+01	.1574023+02
963	.9620000+05	.1200000+04	-.1654724+02	.6054013+01	.1196557+02
964	.9630000+05	.1200000+04	-.1939093+02	.7063922+01	.8975371+01
965	.9640000+05	.1200000+04	-.1618754+02	.5277937+01	.6525571+01
966	.9650000+05	.1200000+04	-.1348837+02	.5111917+01	.3831997+01
967	.9660000+05	.1200000+04	-.1457555+02	.1020993+02	.2241667+01
968	.9670000+05	.1200000+04	-.1340743+02	.1593177+02	.5673733+00
969	.9680000+05	.1200000+04	-.10037425+02	.1693233+02	-.2004612+01
970	.9690000+05	.1200000+04	-.9971832+01	.1478397+02	-.1604912+01
971	.9700000+05	.1200000+04	-.1083595+02	.1237814+02	.3305315+01
972	.9710000+05	.1200000+04	-.8705279+01	.1042132+02	.7718424+01
973	.9720000+05	.1200000+04	-.6387551+01	.1073696+02	.7115543+01
974	.9730000+05	.1200000+04	-.5772979+01	.1475124+02	.3861096+01
975	.9740000+05	.1200000+04	-.4590154+01	.1933976+02	.3475363+01
976	.9750000+05	.1200000+04	-.3136838+01	.1983692+02	.5653433+01
977	.9760000+05	.1200000+04	-.3447159+01	.1391116+02	.5227577+01
978	.9770000+05	.1200000+04	-.4358921+01	.1301706+02	.2611636+01
979	.9780000+05	.1200000+04	-.4736417+01	.1479003+02	.2342030+01
980	.9790000+05	.1200000+04	-.6180793+01	.1055273+02	.2757709+01
981	.9800000+05	.1200000+04	-.9556732+01	.1012599+02	.5054680+00
982	.9810000+05	.1200000+04	-.8333226+01	.1078058+02	-.1730546+01

Table A-2. Second Output (Concluded)

983	.9820000+05	.1200000+04	-.4196230+01	.7813507+01	-.2393444+01
984	.9830000+05	.1200000+04	-.1225429+00	.6771729+01	-.2994997+01
985	.9840000+05	.1200000+04	-.7948330+01	.1227696+02	-.4407917+01
986	.9850000+05	.1200000+04	-.3636739+01	.1484107+02	-.5353553+01
987	.9860000+05	.1200000+04	-.7575879+01	.1387339+02	-.7311931+01
988	.9870000+05	.1200000+04	-.8729830+01	.9509110+01	-.9152884+01
989	.9880000+05	.1200000+04	-.4585345+01	.1371293+02	-.8434335+01
990	.9890000+05	.1200000+04	.1126327+01	.1345939+02	-.6975143+01
991	.9900000+05	.1200000+04	.1932694+01	.7932154+01	-.7051132+01
992	.9910000+05	.1200000+04	-.1390625+01	.4167430+01	-.7805106+01
993	.9920000+05	.1200000+04	-.1382995+01	.4302657+01	-.6439991+01
994	.9930000+05	.1200000+04	.2524433+01	.7332928+01	-.1453944+01
995	.9940000+05	.1200000+04	.5155375+01	.1304260+02	.3679834+01
996	.9950000+05	.1200000+04	.5829346+01	.1146659+02	.3329023+01
997	.9960000+05	.1200000+04	.6730429+01	.1106207+02	-.1209948+01
998	.9970000+05	.1200000+04	.6889304+01	.9570249+01	-.1851770+01
999	.9980000+05	.1200000+04	.5404405+01	.7455294+01	.7775235+01
...	.9990000+05	.1200000+04	.4039972+01	.5835329+01	.1957114+00
...	.1000000+05	.1200000+04	.3551879+01	.5725939+01	-.9331658+00
...	.1001000+05	.1200000+04	.4236723+01	.5392620+01	-.3939912+01
...	.1002000+05	.1200000+04	.6595714+01	.5592545+01	-.9613355+01
...	.1003000+05	.1200000+04	.1067872+02	.5359969+01	-.8652152+01
...	.1004000+05	.1200000+04	.1469094+02	.3701676+01	-.5003543+01
...	.1005000+05	.1200000+04	.1874416+02	.3343245+00	-.6840454+01
...	.1006000+05	.1200000+04	.2231529+02	.2755380+01	-.1097551+02
...	.1007000+05	.1200000+04	.2257654+02	.4905710+01	-.7809245+01
...	.1008000+05	.1200000+04	.1954313+02	.1009173+02	-.2134270+01
...	.1009000+05	.1200000+04	.1630329+02	.1094307+02	-.9501214+00
...	.1010000+05	.1200000+04	.1504951+02	.9759723+01	.6709719+00
...	.1011000+05	.1200000+04	.1603321+02	.1173250+02	.4721702+01
...	.1012000+05	.1200000+04	.1938821+02	.1545776+02	.5752594+01
...	.1013000+05	.1200000+04	.2204596+02	.1820479+02	.3482587+01
...	.1014000+05	.1200000+04	.1996064+02	.1502035+02	.4482741+00
...	.1015000+05	.1200000+04	.1565700+02	.1505580+02	-.3347503+01
...	.1016000+05	.1200000+04	.1856739+02	.1494301+02	-.6411258+01
...	.1017000+05	.1200000+04	.2225539+02	.1003626+02	-.8790057+01
...	.1018000+05	.1200000+04	.2052539+02	.2650727+01	-.1244334+02
...	.1019000+05	.1200000+04	.1572551+02	-.1523349+00	-.1350251+02
...	.1020000+05	.1200000+04	.1344159+02	.1531095+01	-.9703805+01
...	.1021000+05	.1200000+04	.1229839+02	.2929995+01	-.4475942+01
...	.1022000+05	.1200000+04	.1058305+02	.1055194+01	-.1217754+02
...	.1023000+05	.1200000+04	.1058740+02	-.4059466+01	-.1299310+02